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NORTHEASTERN ONTARIO REGION ECONOMIC SURVEY 1966



APPLIED ECONOMICS BRANCH
OFFICE OF THE CHIEF ECONOMIST

ONTARIO DEPARTMENT OF ECONOMICS AND DEVELOPMENT

HON. JOHN P. ROBARTS
Prime Minister of Ontario

HON. STANLEY J. RANDALL
Minister of Economics and Development

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ECONOMIC SURVEY OF THE NORTHEASTERN ONTARIO REGION

Prepared by

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Office of the Chief Economist

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Preface

The Northeastern Ontario Economic Survey is a sequel to an earlier study of the Region published in 1958 and now out of print. As in the eight regional economic studies which have been published to date in this series, this survey sets out the major components of economic activity, examines the extent and direction of growth and indicates the Region's contribution to the Provincial economy.

These studies are intended to support the Government's policy of regional development which seeks to ensure that people in all parts of the Province will share in the benefits of economic and social development. Regional development is looked upon as an integral part of the Government's contribution to the development of the Province as a whole. The studies provide extensive economic and statistical material of practical use to all engaged in economic development on a regional basis.

The material for this report was prepared in the Applied Economics Branch of the Department of Economics and Development, under the direction of Mr. O. M. Schnick and Mr. H. Banning. The research, analyses and preparation of textual and tabular material were carried out by Mrs. M. B. Levitt with the assistance of Mr. E. Matuszak and Mr. K. Williams, staff members of the Branch, who prepared the chapters on mining and physical geography, respectively. The Department of Lands and Forests prepared the chapter on forestry and the forest-based industries. Mr. W. Cameron and Mr. J. N. Heginbottom were responsible for the maps and charts while checking of text and tables was carried out by Miss A. K. Rich.

We wish to thank Dr. W. G. Dean, Department of Geography, University of Toronto for his assistance in reviewing the chapter on physical geography. We also appreciate the help of the Ontario Departments of Agriculture, Education, Health, Highways, Lands and Forests and Tourism and Information in reviewing material for the survey.

We also wish to thank other organizations and companies for assistance in gathering data. Our appreciation is extended to the office of the Northeastern Ontario Development Council, the Dominion Bureau of Statistics, Indian Affairs Branch, Department of Citizenship and Immigration, The Hydro-Electric Power Commission of Ontario, Great Lakes Power Corporation Limited, Northern and Central Gas Company Limited, Great Northern Gas Company Limited, The Algoma Steel Corporation, Limited, The Bell Telephone Company of Canada, the Canadian National Railways, the Canadian Pacific Railway Company and the Ontario Northland Transportation Commission.

STUART W. CLARKSON
Deputy Minister

June, 1966



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Introduction

The Northeastern Ontario Region, "The Treasure Chest of Canada", comprises the six districts of Algoma, Cochrane, Manitoulin, Nipissing, Sudbury and Timiskaming. It has a land area of nearly 105,000 square miles or about 30 per cent of the land area of Ontario and a population estimated at about 550,000, eight per cent of the Provincial total.

The economy of the Region is based on its natural resources. Mining and forestry, manufacturing and the production of electricity, tourism and its related services, all are dependent on the rocks and trees, the lakes and rivers that abound in Northeastern Ontario. The Region's mines produce two-thirds, by value, of all minerals produced in the Province, while from its forests come two-thirds of Ontario's sawmill output, one-third of its veneer and plywood production and more than one-quarter of its pulp and paper. Nickel, copper, uranium, gold and iron ore are the major metals, followed by the platinum group, silver and cobalt and small amounts of selenium, zinc, tellurium and molybdenum.

Three major groups of manufactures, all closely related to the natural resources of the Region, account for 90 per cent of Northeastern Ontario's value of factory shipments. These three are the primary metals group, in this Region concerned especially with the production of iron and steel and the smelting and refining of base metals; paper and allied industries, in this case, pulp and paper mills; and wood industries, particularly lumber products and plywood and veneer.

The Region is well endowed with hydro sites, many of which have already been at least partially developed. Construction of an extra-high-voltage transmission line was completed this year. Initially, it will bring power from four generating stations in the James Bay watershed to load centres as far south as Toronto, at 230,000 volts, later being raised to 500,000 volts.

The magnificent scenery to be found in many parts of the Region, its areas of untouched wilderness, and its excellent hunting and fishing are still the main attractions for tourists. Areas not readily accessible by road may be reached by rail or chartered air service.

This study looks first into the physical structure of the Region to assess its influence on the economic developments which have taken place, e.g., the development of mining, forestry and other primary industries, the establishment and growth of resource-oriented manufacturing, the exploitation of water power and the development of a tourist industry. The growth and change in population and labour force patterns is also discussed. Finally, an attempt is made to sum up the effects of all these developments on the individual districts and centres.

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Physical Geography

Many of the rocks of Northeastern Ontario rank among the oldest in the world, some being estimated at almost 3,000 million years old. These rocks were formed in the Precambrian Era, a period characterized by much volcanic activity, when molten rocks covered the surface of the earth and later were intruded (forced up) into cracks in older rocks. The mineral deposits upon which the economy of the Region is largely founded are closely associated with these ancient intrusive rocks. Iron, base metals and asbestos were deposited approximately 2,600 million years ago, while gold-bearing quartz veins were introduced when chains of mountains were being formed about 2,500 million years ago. Elliot Lake's uranium deposits were laid down as sedimentary rocks in about 2,300 million B.C. and Cobalt's silver veins were emplaced about 2,100 million B.C. The nickel intrusive was introduced at Sudbury some 1,600 million years ago. Somewhat younger Palaeozoic rocks are found both to the north and south of the Precambrian formation, and also in a small downfaulted basin in the eastern part of the Region, north of Lake Timiskaming. These horizontally bedded sedimentary Ordovician and Silurian formations are mainly limestones with some interbedded shale and sandstone, all of which were derived from soil materials which once covered the older Precambrian rocks. Similar formations which occur on Manitoulin Island are a continuation of the Niagara Escarpment of Southwestern Ontario. Some of Ontario's younger rocks, deposited in the Devonian and Cretaceous Eras, 400 million and 100 million years ago, respectively, are found in the northeastern sector of the Region; the Cretaceous rocks contain fireclay and lignite (brown coal).

Present surface features, however, do not owe their form and structure directly to these very ancient periods of mountain-building, erosion and deposition, but rather to the continental glaciation which occurred between about 40,000 and 5,000 years ago when an ice sheet spread southward from the James Bay area. The erosive effect of the moving ice mass on the ancient crystalline rocks of the Canadian Shield was striking: rock knolls were rounded, rock basins were scoured and deepened, weathered rock and soil were stripped from the surface and carried away within the ice mass and Calcareous rock materials, derived from the Palaeozoic limestones of the James Bay area, were carried down to cover the margins of the Canadian Shield. The period of deglaciation had an even greater influence on present land forms for the melting of the ice mass left behind a remarkable complex of both form and material. Level or gently undulating till plains or ground moraines consisting of a mixture of clays, sands, silt and stones, were laid down beneath the ice or dumped when it melted. Occasionally this till was moulded into a series of drumlins (egg-shaped streamlined hills paralleling the direction of the ice flow). Unsorted debris abandoned at the front or sides of the melting ice mass was left as a series of hilly end or lateral moraines. Melting ice water within or on top of the ice deposited sandy particles along its channel, and today these remain as eskers (long sinuous sandy ridges generally following the direction of ice flow). Sands were deposited at the outlets of these streams, which moved back during the melting seasons, and were spread out to form hummocky kames or sandy ridges. Outwash plains represent either eroded eskers or the

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coalescing of former deltas of these melt water streams beneath the ice-front, while lacustrine plains consist of fine clay particles deposited as sediment in glacial lakes. A great mass of melt water, known as Lake Barlow-Ojibway, was trapped between the retreating ice and the northern edge of the Precambrian Shield, and material deposited in this lake formed the Great Clay Belt. An earlier arm of this lake occupied the structural basin north of the present Lake Timiskaming and sediments laid down then now form the Little Clay Belt.

During the glacial period, the weight of the continental ice mass depressed the land surface. When the ice melted the land did not immediately rebound to its present levels, so that the sea flooded the lower areas of the Hudson Bay coastal plain. Ever since there has been a gradual rising of the land by a few feet a century. The series of abandoned marine beaches at the southern end of James Bay is evidence of this readjustment.

Today, Northeastern Ontario is an area of comparatively low relief, although by no means as level as much of Southern Ontario. The Precambrian Shield is generally over 1,000 feet above sea level, forming an elevated, dissected plateau-like surface. The general uniformity of skyline suggests that this area was once worn down to a peneplain (flat low-level plain) and was then uplifted to a plateau with higher areas lying near Lake Superior. Stumps of former mountain peaks still rise above the general level. Mount Batchawana, for example, is 2,100' above sea level, the highest point in the Region and the second highest in the Province. A few other areas exceed 1,500': Maple Mountain (2,000') is found in the eastern part of the Shield area; La Cloche Mountain, inland from Georgian Bay, is 1,785' above sea level; the hilly area northeast of Kirkland Lake reaches a peak at Ghost Mountain (1,576'); while to the south the Algonquin Park Uplands rise to 1,700'. Although steep slopes are found in the Algonquin Park Uplands, the La Cloche Mountains, and along Lake Superior, where coastal cliffs are common, moderate slopes are most prevalent in the Region. The lowland areas tend to have gentle slopes, and only the coastal plain around James Bay can be considered flat.

The whole Region suffers from poor drainage—a legacy of limited relief and the glaciation which disrupted former drainage patterns and created the myriad of lakes, both large and small, now occupying over-deepened rock basins or dammed-up by glacial deposits. The drainage is immature, with haphazard river routes, few definite valleys, and a lack of the smooth longitudinal profiles characteristic of mature streams. Although the area falls into six major drainage basins, the most important watershed follows the low, poorly defined height of land between rivers flowing north to James Bay, and those flowing south into the Great Lakes and Ottawa River systems. The north-flowing Harricanaw, Moose and Albany river systems are long, wide, shallow and slow-flowing except where underlying rocky outcrops create rapids and small waterfalls, particularly where the rivers fall down into the coastal plain from the Precambrian Shield. In the Superior and Huron drainage areas, many comparatively short streams flow south from the watershed at approximately 1,100' to the mean water levels of Lakes Nipissing (643' above

mean sea level), Superior (602'), or Huron (581'). The southeastern corner of the Region drains eastwards to the St. Lawrence River from Lake Timiskaming (584') via the Ottawa River.

Settlement in Northeastern Ontario has been limited as much by its continental climate as by its terrain. Monthly average temperatures tend to become lower the farther north one goes but, within the Region, there are relatively few variations. Greater local change is apparent in the precipitation pattern of the Region. Most of the areas receives an average annual precipitation (rain plus snow) of between 30 and 35 inches, a gradual increase occurring towards the south along the shores of the Great Lakes. Within Algonquin Park, however, precipitation varies from 28" near the Ottawa Valley to 35" at its western boundary. Average annual snowfall also varies considerably. It reaches 150" in the highlands north of Lake Superior and exceeds 120" in the Great Clay Belt, but is only 110" at Moosonee and 104" at Kirkland Lake. A marked reduction may also be noted in the central portion of the Region—Chapleau receives 93" and Sudbury only about 74".

SELECTED CLIMATIC DATA FOR THE NORTHERN AND SOUTHERN SECTORS OF THE NORTHEASTERN ONTARIO REGION

	Temperatures (°F.)						Precipitation ("")	
	Normal Expectable Extremes			Highest Recorded	Lowest Recorded	Average Frost-Free Period	Average Annual Precipitation	Average Annual Snowfall
	Mean Daily Average	(Mean Daily Maximum)	(Mean Daily Minimum)					
Kapuskasing*								
(Cochrane District)								
January.....	-0.7	9.6	-11.0	47	-53	83 days	29.27	108.1
July.....	63.1	74.2	52.0	101	31			
North Bay								
(Nipissing District)								
January.....	11.0	21.0	0.6	55	-43	126 days	33.96	76.1
July.....	65.6	78.4	56.0	99	40			

Based on averages for 1931-1960, supplied by Climatology Division (Meteorological Branch).

*Kapuskasing Experimental Farm.

Of greater significance to the farmer is the length of the frost-free season. This declines considerably as one moves inland and northward from the Great Lakes. The southern part of the Region averages about 100 frost-free days with over 120 days around Lake Nipissing, but in the Great Clay Belt the potential growing season is much shorter—at Kapuskasing, for example, the last spring frost generally occurs on or about June 14th, while the first autumn frost, on average, occurs on September 5th, only 83 days later. In addition, almost half of the rain falls in late summer and early autumn, the harvest season. These disadvantages are only partially offset by the long hours of sunlight enjoyed during the summer.

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Large vegetation zones are related to broad climatic areas, which in turn are modified by the terrain to form a mosaic of local climates, each closely related to drainage, slope and aspect. Vegetation growth and development and the types of vegetation to be found are largely determined by these local climatic zones.

Northeastern Ontario extends through three major vegetation zones: Sub-Arctic James Bay Coastal Forest, Central Coniferous Taiga or Boreal Forest and Great Lakes Mixed Forest. The sub-arctic "land of the little sticks" in the northern coastal plain is a result of a combination of low temperatures, poor drainage and a concentration of nutrients in new peat accumulations. Scattered stands of stunted white spruce, black spruce and white birch are found along the better-drained river banks and raised beaches, but these rapidly deteriorate away from the river and much of the land is treeless muskeg (undrained areas filled with peat moss). The Coniferous Forest zone which stretches across the Region between the coastal plain and the Arctic watershed or height of land, is the most important source of pulpwood in the Region today. Particularly valuable in this regard is the Great Clay Belt with its characteristic dense stands of black spruce. Better-drained parts of the zone contain white spruce, balsam fir, aspen, poplar and white birch, while jack pine is common on the sand plains and rocky ridges. When the Great Lakes Mixed Forest area, largely south of the watershed, was first settled by Europeans, pines were common; today vegetation consists largely of yellow birch, balsam fir, white spruce, white pine and sugar maple. Black spruce, tamarack and some white cedar predominate in swampy areas while jack pine is characteristic of the dry sand plains. The Lake Superior coastal area, the upper Ottawa valley and much of Algonquin Park are dominated by tolerant hardwoods, hemlock, pine, spruce and fir, while various types of scattered forests are found on the shallow soils of Manitoulin Island, along the Huron North Shore and in the Nipissing lowlands.

Soil development is due to the interaction of local climate, land-forms and vegetation. The broad soil zones in the Region vary from north to south between podzols underlying the coniferous forests and brown earths beneath the mixed forests. Covered by a mat of evergreen needles, the surface layers of the podzols tend to be acid and infertile due to a downward movement of soluble nutrients in soil water (leaching). These nutrients, however, are available for tree roots in the deeper layers of the soil. Many areas have a gley-layer where pore spaces between soil particles are saturated with water; these particles adhere together to form a massive impermeable layer which prevents drainage, causing excessively water-logged areas. The brown earths are more fertile since there is less leaching and a better structure due to a greater admixture of organic materials. Over vast areas of the Region, however, shallow undeveloped soils, bare rocks, bog soils or deep coarse sandy areas tend to be characteristic.

PHYSIOGRAPHIC DIVISIONS AND LAND USE

Physical environment achieves economic significance only when it is utilized by man or when it influences his activities. On the basis of bedrock conditions and

surface deposits it is possible to delimit seven major physiographic divisions in Northeastern Ontario, the boundaries of which are largely based upon significant differences in relief and upon the maximum extent of former glacial lakes or seas. Variations in land use tend to be associated with these physiographic areas.

The Hudson Bay Lowlands, to the north of the Canadian Shield, comprises two sub-regions—the James Bay Coastal Plain and the Border Lowlands. Both of these are very poorly drained, but the bedrock beneath the Border Lowlands is closer to the surface so that there is less muskeg. The James Bay Coastal Plain, which has been slowly emerging from its postglacial inundation by the sea, has a complex sequence of raised beaches marking successive shorelines. The area is agriculturally valueless due to adverse climate and terrain; there are few commercial stands of trees; there is little hunting or fishing except for geese in the fall; and only a few hydro sites have been developed where the Abitibi and Mattagami rivers, tributaries of the Moose, drop down from the Precambrian Canadian Shield.

The Shield underlies most of the rest of Northeastern Ontario. It forms an extensive dissected plateau-like area, with thin sporadic drift often covering the hills and ridges and with dispersed drift pockets in the valleys. The Algonquin Park Uplands, the highest area of the Southern Ontario Shield, contains numerous lakes within its rocky and hilly wilderness. The Gogama Sandy Upland which extends over most of the southern part of the Region, consists of rocky uplands covered with lacustrine sands deposited in small glacial lakes; a large number of lakes in rocky basins, of which the largest and best known is Lake Timagami; a few fragments of moraine; and numerous eskers, mainly in long valleys. Some agriculture is carried on, especially in the southwestern corner. The raising of hay and oats and dairy and beef cattle are the major activities. An extension of the Long Lake Upland is found in the northwestern part of the Region where bold, rock-controlled terrain is common, drift deposits are not so widespread and eskers are rare. The till-cover is of variable depth and contains a great deal of limestone carried down from the northeast. Although still poor, the drainage is better than in adjoining northern and eastern areas. Very little soil on the Canadian Shield is suitable for agriculture, but it is one of Canada's leading sources of timber and pulpwood and is one of the country's richest mineral-producing areas. The Shield is also popular for hunting and fishing due to its remote and wild state.

Glacial deposits have modified some of the lowland areas of the Shield, particularly the Central Drift Plains, which are south of the Hudson Bay Lowlands and overlie the northern part of the Shield. In the Central Patricia Plains to the west, landforms associated with lowland glacial deposition predominate; there is a variety of till plains, drumlins, end moraines, eskers and outwash sands and clays interspersed with occasional outcrops of bare bedrock. The Great Clay Belt, also known as the Cochrane Clay Plain, occupies the eastern part of the Central Drift Plains. Here, a glacial lake, Lake Barlow-Ojibway, was formed between the retreating ice and the northern edge of the Shield. The boundaries of the Clay Belt can generally be recognized by the farthest margins of the lake. A varied and

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complex mixture of ground and end moraines, drumlins, outwash sand plains as well as the dominant clays, silt or sands deposited as sediments in the glacial lake are represented here. The area contains valuable forest resources, and is a leading supplier of pulpwood and saw timber. Its recreational potential is, as yet, largely untapped. Although it contains some of the most fertile soils in the Province, climate, poor drainage and distance from large urban centres have proved to be so disadvantageous that agriculture is carried out only in a few small areas—mainly in ribbon-like strips along the main highways. The chief areas are between Porquis and Matheson, around Cochrane, Hearst and Kapuskasing, and in Mountjoy Township, west of Timmins. Climate and soil favour the production of forage crops, potatoes, small fruits such as blueberries and the raising of livestock. Hay is the leading crop, although outdoor drying is susceptible to the wet fall weather which reduces its nutritional value. A limited number of beef cattle are being raised; dairying is locally important for fluid milk. Much of the agriculture here tends to be of a subsistence nature and is carried on in conjunction with some other occupation.

The Little Clay Belt, or Timiskaming Clay Plain, represents the southern part of Lake Barlow-Ojibway and was formed when glacial melt water was dammed up behind the large end moraine still found at the southern end of Lake Timiskaming. Lacustrine sediments partially filled in the ancient Palaeozoic structural basin of the Timiskaming graben (downfaulted area) before the Shield to the north rose and divided the lake in two. The Little Clay Belt is more dominantly water-laid clay than the Great Clay Belt, and stream development is more advanced, particularly in the Wabi and Blanche Valleys. Soils vary from sandy loam to black muck and rich fertile clays, all of which are particularly suitable for farming. This small area, in fact, accounts for a quarter of the total value of agricultural production in the Northeastern Ontario Region. Physical conditions favour the production of forage crops and certain grains, while economic conditions have led to an increase in the number of beef cattle and other livestock. Although there is little real specialization, hay is the most important crop throughout the area, dairying tends to increase in intensity around Earlton, interest in beef cattle is stronger around New Liskeard, and potatoes and vegetables are heavily concentrated in the Charlton-Englehart area. Grass and clover seeds are now being exported.

The influence of higher lake levels during the Ice Ages is apparent in the Nipissing Lowlands in the southern part of the Region. Here lacustrine deposits of the ancient glacial Lake Nipissing and the sandy spillway deposits of the old Nipissing-Mattawa River overflow channel are found. Flat beach terraces can be traced along the northern and northwestern shores of the present lake and a flat clay and clay-loam terrace extends from Meadowside to west of Hagar, while North Bay is built upon coarse sandy terraces associated with the overflow channel. Numerous granitic bosses outcrop south of North Bay, but the bedrock then becomes covered to a considerable depth by clay and heavy clay loams and assumes a more rolling character in a belt from Lake Restoule to Powassan, Bonfield and

Eau Claire. The Warren area is influenced by the Veuve River's deposition, but the French River area consists of a more rolling sandy loam showing little influence from river deposition. Farms located on the clay plains around Sturgeon Falls and Hagar are prosperous and concentrate on general farming and the production of fluid milk and seed oats. South of Lake Nipissing, the heavy rolling clay soils do not favour mechanization, but are suitable for dairying, and supply North Bay with milk. Smaller farming districts are found around Astorville, Corbeil, Bonfield, Rutherglen and Eau Claire, but these are limited by topography, and are less prosperous, although they do produce some beef cattle, vegetables and dairy products. Sheep rearing is carried on in the rougher areas. Potatoes and other vegetables are grown on the lighter sand soils of the Shield within the sphere of influence of North Bay, especially around Widdifield and Feronia.

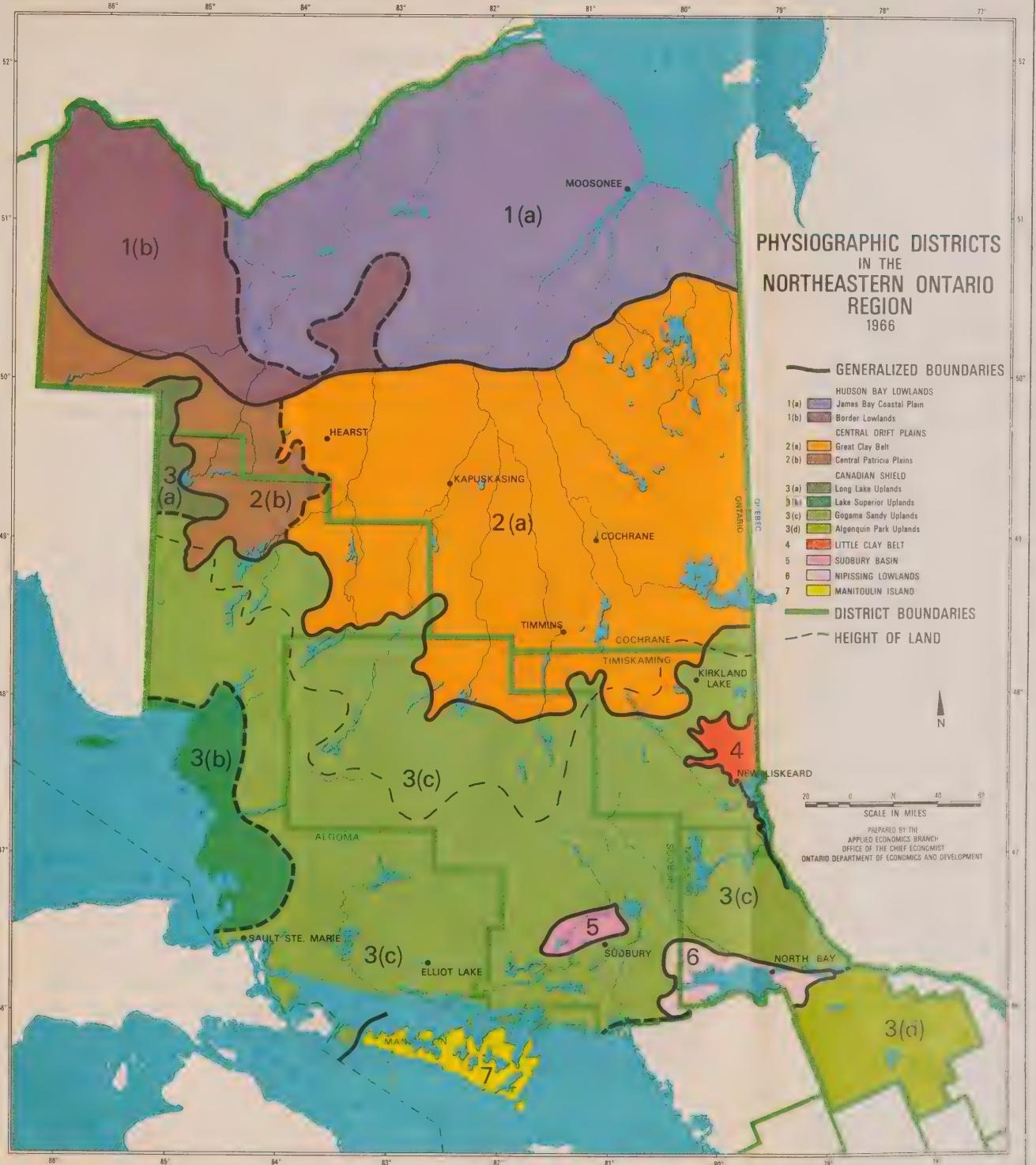
The boundaries of the Sudbury Basin correspond to the edge of the nickel eruptive where several important minerals including nickel, copper, gold, silver and platinum metals are found. The Precambrian sedimentary rocks were largely covered by glacial till and later by stratified clays and sands when the Basin formed a deep bay in glacial Lake Algonquin—an enlarged forerunner of the present Great Lakes. Although agriculture is a secondary land use, the cool sandy soils and the climate within the Basin are particularly well-suited for seed potatoes. Hay and oats are the other main crops. The raising of livestock generally is relatively rare, although dairying for the Sudbury market is profitable. Market gardening for the local urban areas is carried on in small areas in Blezard, Rayside and Hamner townships. South of the Sudbury Basin a few patches of farm land are found on better soils. The farmers grow hay, oats, clover, barley and some wheat. Waters Township is important for dairy cattle.

Manitoulin Island, the largest "freshwater" island in the world, consists mainly of limestone tablelands tilted towards the south, and is similar in structure to the Bruce Peninsula. Much of the bedrock, which was originally covered with glacial drift deposits, was washed clean by waves when the island was covered by glacial Lake Algonquin and its lower successor, glacial Lake Nipissing. Remnants of old shorelines, bluffs, sand dunes and gravel beaches can still be traced, particularly in the south. The main agricultural activity is the raising of livestock, with emphasis on beef cattle. Farms tend to be almost double the provincial average in size. Large-scale turkey raising is an important commercial enterprise, and fur farming is a specialty. Most of the forest areas have now been cleared, but tourism has increased in significance and now makes an important contribution to the economy.

Northeastern Ontario has been developed primarily for its valuable natural resources and will continue to play a vital role in the economy of Ontario and of Canada. Geological conditions on the Shield have led to the development of one of the richest and most varied mineral areas in the world. These mineral resources are the mainstay of the Regional economy, and have been responsible for much of the settlement. Climate, soils and poor drainage have prevented agriculture from becoming anything more than secondary in importance. Even in a few

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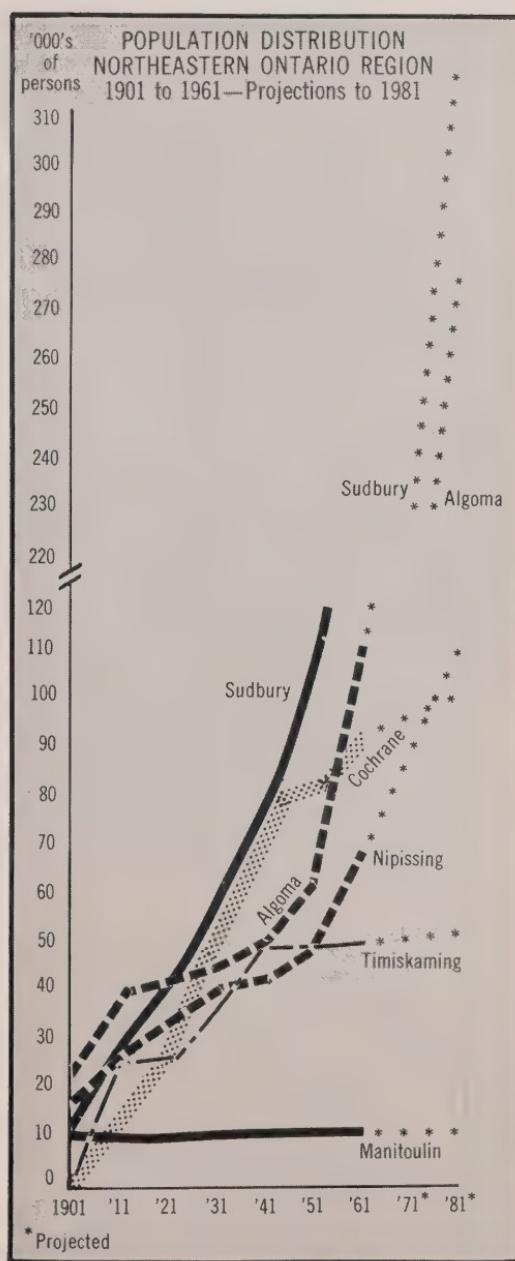
favoured pockets agriculture is generally still a subsistence economy, a part-time occupation, able to supply only local needs. Climate and drainage, however, have encouraged the growth of forests, while the relative absence of alternative land uses has made it possible to utilize this natural resource to the best advantage so that forest industries have become the second mainstay of the Regional economy. Geological bedrock and erosive processes have provided many potential sites for hydro-electric power generation, and the climate and drainage have ensured a more than adequate supply of water, which may, in the future, become one of the sources of supply for the South. The wild unspoilt nature of the land with its rocks and lakes, and the abundance of wildlife and fish in the forests and streams is attracting more and more tourists and is aiding in the development of the Region as a recreational area.



Population

In 1961 some 505,600 people lived in Northeastern Ontario; it is estimated that by 1981 there will be close to 875,000 people in the Region. More than 80 per cent of this anticipated growth is expected to take place in two districts—Algoma and Sudbury—with Algoma experiencing an increase of about 150 per cent over the 20 years and Sudbury about 90 per cent. Looking back over the 20 years prior to 1961, the same general pattern of growth can be seen, with Algoma and Sudbury showing the greatest population increases, 114 and 105 per cent, respectively, followed by Nipissing (63 per cent) and Cochrane (19 per cent). Prior to this period, Cochrane District experienced by far the fastest rate of growth—more than doubling between 1911 and 1921 and again between 1921 and 1931.

In the 50 years between 1911 and 1961, annual population growth in the Region averaged about 7,100 persons. In the 10 years immediately prior to 1961, however, it averaged 13,600 and between 1956 and 1961, stood at 14,600. It is expected that between 1961 and 1981, the annual increment will continue to rise and will average between 17,000 and 18,000 persons per year over the 20-year period.



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One of the major factors in the growth of the Region's population has been immigration, not only from other countries but from other parts of Ontario and Canada. It is, on the whole, an area of net migration i.e. more people come to live in the Region than leave it to live elsewhere. While there is a higher than average birth rate and a lower than average death rate, natural increase alone cannot account for the growth which actually took place. In the ten years prior to 1961, for example, there were 110,488 more births than deaths in the Region but total population increased by 135,968—25,480 more people, therefore, moved into the Region than moved out of it.

The proportion of the total population in each district has changed considerably over the past 50 years. In 1911, for example, only 8 per cent of the people in the Region lived in the District of Cochrane—now 19 per cent live there. Over the same period the proportion in Sudbury District rose from 20 to 33 per cent. In Algoma, however, the proportion dropped from 28 to 22 per cent, in Nipissing from 19 to 14 per cent, in Timiskaming from 18 to 10 per cent and in Manitoulin from 8 to 2 per cent.

Approximately two-thirds of the people in Northeastern Ontario, some 341,000, are urban dwellers i.e. live in communities of 1,000 or more people or in the urbanized fringes of large cities. Between 1951 and 1961, while total population grew by 37 per cent, urban population increased by 45 per cent and rural population by 22 per cent. In Ontario, where about 80 per cent of the people live in urban areas, urban population grew by 46 per cent and rural population by only 6 per cent in the same ten-year period.

The largest percentage increase in urban population took place in Algoma District (78 per cent), followed by Sudbury (55 per cent) and Nipissing (52 per cent). Cochrane, Timiskaming and Manitoulin showed increases of 17, 12 and 9 per cent, respectively. The largest numerical increase, 45,400, occurred in Sudbury District. Rural population also increased fastest in Algoma (60 per cent), Sudbury (41 per cent) and Nipissing (25 per cent). Timiskaming recorded a drop of 13 per cent, about 2,650 persons, and Manitoulin a drop of nearly 2 per cent or 170 persons.

The four largest urban centres in Northeastern Ontario are Sudbury, with a population of 80,120 in 1961, Sault Ste. Marie (43,088), Timmins (29,270) and North Bay (23,781). Together with their surrounding urbanized fringes, these four communities account for approximately half of the total population of the Region. On January 1, 1965, the City of Sault Ste. Marie amalgamated with the townships of Korah and Tarentorus resulting in a City population of some 70,000 persons.

While rural inhabitants make up one-third of the total population of the Region, people living on farms account for only six per cent of the total. The remainder live in communities of less than 1,000 people.

Compared with other parts of the Province, the people of Northeastern Ontario are a young people. The median age of residents of the Region is 23 years, consid-

POPULATION DISTRIBUTION, DISTRICTS, NORTHEASTERN ONTARIO REGION,
1901 TO 1961 AND PROJECTIONS TO 1981

	1901	1911	1921	1931	1941	1951	1961	1971	1981
A—Clay Belt									
Cochrane	—	12,236	26,293	58,033	80,730	83,850	95,666	99,300	103,300
Nipissing	17,306	28,066	34,541	41,207	43,315	50,517	70,568	89,000	112,800
Timiskaming	1,252	26,592	26,657	37,043	50,604	50,016	50,971	52,000	52,700
Sub-total	18,558	66,894	87,491	136,283	174,649	184,383	217,205	240,300	268,800
B—Nickel Range									
Manitoulin	11,828	11,324	10,448	10,734	10,841	11,214	11,176	11,200	11,400
Sudbury	16,103	29,778	43,029	58,251	80,815	109,590	165,862	230,600	317,400
Sub-total	27,931	41,102	53,497	68,985	91,656	120,804	177,038	241,800	328,800
C—Sault									
Algoma	25,273	40,962	43,695	46,444	52,002	64,496	111,408	176,000	277,700
Total, Northeastern Ontario Region	71,762	148,958	184,683	251,712	318,307	369,683	505,651	658,100	875,300
Total, Province of Ontario	2,182,947	2,527,292	2,933,662	3,431,683	3,787,655	4,597,542	6,236,092	7,787,500	9,891,300
Region as % of Province	3.3	5.9	6.3	7.3	8.4	8.0	8.1	8.5	8.8

NORTHEASTERN ONTARIO REGION

erably below the 28 years average for the Province as a whole. The median age is highest in Manitoulin, 24.7 years, and lowest in Sudbury, 22.6 years.

People in the working age group i.e. between 15 and 64 years of age, account for 57 per cent of the Region's population; children under 15 make up 38 per cent and older people, 65 and over, 5 per cent. In the Province, the proportions are 60, 32 and 8, respectively. While the number of persons in the 15 to 64 age group rose from 224,000 to 289,000 or by 29 per cent between 1951 and 1961, the relative position of the group declined—from 61 per cent of the total population to 57 per cent. The number of children increased from 126,000 to 192,000 or by 52 per cent and from 34 to 38 per cent of the total population. The number of people in the 65 years and over category increased from 19,000 to 25,000 but their relative position remained unchanged.

The ratio of males to females stands at 101 to every 100 in Ontario. In the Northeastern Ontario Region there are 110 and in the District of Cochrane, 113 for every 100 females. The ratio is the same for the Province as in 1951 but is lower in the Region, dropping from 114 in the area as a whole and from 118 in Cochrane.

About 75 per cent of the Region's population was born in Ontario and 86 per cent somewhere in Canada. The proportion, of course, varies somewhat from district to district, with Manitoulin having the highest proportion of its population Canadian born (96.6 per cent) and Algoma the lowest (82.4 per cent). Nearly half of the 68,400 people born outside of Canada are recent immigrants i.e. came into the Region between 1951 and 1961.

By ethnic groups, 39 per cent of the Region's people are of British ancestry and 36 per cent are French. The next largest groups are Italian (5 per cent), German (3.5 per cent), Finnish (3 per cent) and Ukrainian (2.4 per cent). Two per cent, 10,552, are native Indians. Three-quarters of the Indian population live in either Algoma, Manitoulin or Cochrane. About 6,500 live on Indian Reserves located mainly in the districts of Manitoulin (2,765 in 1961) and Algoma (2,120).

The mother tongue of 55 per cent of the people in Northeastern Ontario is English, of 30 per cent, French. Four per cent speak Italian, two per cent Finnish, two per cent German and 1.5 per cent an Indian language. Manitoulin District has the highest percentage of population speaking English (74 per cent) and Cochrane has the highest proportion speaking French (46 per cent). The official language for 65 per cent of the Region's people is English, for 8 per cent, French and for 26 per cent, both.

The largest religious denomination in the Region is Roman Catholic (57 per cent of the population), followed by the United Church of Canada (20 per cent) and the Anglican Church of Canada (10 per cent). In the Province as a whole, the proportions are 30, 26 and 18 per cent, respectively.

The average family in Northeastern Ontario is somewhat larger than in the Province as a whole. In 1961, the average number of persons per family in the Region was 4.1, compared with 3.6 for the Province. Cochrane and Nipissing recorded an average of 4.2 each, Sudbury 4.1 and the remaining three districts, 4.0.

Birth rates in Northeastern Ontario are also generally higher than in the Province, while marriage and death rates are lower. In 1964, for example, the birth rate in the Region was 26.9 per 1,000 population, ranging from 22.5 per 1,000 in Manitoulin to 28.3 in Algoma. These rates are lower than in the previous year in all districts with declines particularly evident in Nipissing and Sudbury. The rate for Ontario was 23.2, slightly lower than in 1963. Marriage rates were 6.8 per 1,000 for the Region, with a low of 6.5 in Cochrane and Sudbury and a high of 7.6 in Manitoulin. The rate was somewhat higher than in 1963 in Algoma, Manitoulin and Timiskaming. The death rate varied from 5.9 per 1,000 in Sudbury to 9.6 in Manitoulin with an average of 6.6 for the Region. The death rate for the Province was 7.9 per 1,000. In all cases, rates are lower than ten years earlier.

Labour Force, Earnings and Income

LABOUR FORCE

In the ten years between 1951 and 1961, the labour force of Northeastern Ontario increased by 32,070 people or 24 per cent, to 167,000. This figure represents 53 per cent of all persons 15 years of age and over—79 per cent of all males and 24 per cent of all females in this age group. These ratios are slightly lower than in the Province as a whole where 81 per cent of the males and 33 per cent of the females 15 years of age and over were in the labour force, with an overall average of 57 per cent.

Although the number of men in the labour force is expected to increase from 131,700 to 209,800 or by 59 per cent by 1981, a decline in male labour force participation is anticipated—from 79 per cent of those 15 years of age and over to 73 per cent. The number of women in the labour force is expected to rise by 83 per cent to 64,500. Female participation in the labour force, however, is expected to increase—from 24 to 25 per cent of those 15 years of age and over.

As might be expected in an area with the vast mineral resources of Northeastern Ontario, mining accounts for a larger proportion of the labour force (19 per cent) than any other industry. It is, however, closely followed by the service industries—community, business and personal—which are becoming increasingly important not only in this Region but in all parts of the country. Manufacturing accounts for 16 per cent, trade for 13 per cent and transportation and communication for 10 per cent of the labour force. The remainder are engaged in construction, public administration and defence, forestry, agriculture, finance, insurance and real estate.

LABOUR FORCE, NORTHEASTERN ONTARIO REGION, 1961

	Number	% of Total
Mining.....	31,789	19.0
Community, Business and Personal Service Industries.....	29,306	17.5
Manufacturing.....	27,182	16.3
Trade.....	21,825	13.1
Transportation and Communication.....	17,160	10.3
Construction.....	10,162	6.1
Public Administration and Defence.....	8,218	4.9
Forestry.....	7,940	4.8
Agriculture.....	5,140	3.1
Finance, Insurance and Real Estate.....	3,239	1.9
Fishing and Trapping.....	157	0.1
Not Stated.....	4,920	2.9
Total.....	167,038	100.0

Mining accounts for a larger proportion of the labour force than any other industry in three of the six Northeastern Ontario Districts—Cochrane 21 per cent, Timiskaming 25 per cent and Sudbury 30 per cent. In Nipissing the service industries were most important, attracting 22 per cent of the labour force, in

Manitoulin agriculture accounted for 26 per cent while in Algoma manufacturing made up the largest segment of the labour force, 28 per cent. It should be noted that 10 per cent of Nipissing's labour force is concerned with public administration and defence.

The proportion of the Region's labour force engaged in various industries has changed considerably since 1951. Manufacturing, for example, dropped from 22 per cent to 16 per cent, forestry from 7 to 5 per cent and agriculture from 7 to 3 per cent. On the other hand, the proportion of the labour force in trade rose from 10.5 to 13 per cent, in services from 15 to 17.5 and in mining from 18 to 19 per cent.

As in the Region as a whole, considerable change occurred between 1951 and 1961 in the districts. The proportion of the labour force engaged in agriculture, forestry, fishing, trapping and manufacturing declined in all districts. In Algoma, however, although the proportion in manufacturing declined considerably—from 39 to 28 per cent—the actual number rose—from 9,800 to 10,800. This decline occurred because of the relatively larger increases in other industries e.g. mining—from 733 to 4,592 persons, and an overall increase in the labour force of 55 per cent. Three industries, trade, finance, insurance and real estate, and services increased their relative share of the labour force in all districts during the 10-year period.

The 1965 level of employment in manufacturing, as indicated by employment indexes, was not only considerably higher than in the previous year but well above the previous peak reached in 1957.

In mining, employment in 1965 was slightly above the level of the previous year but far below the peak reached in 1959. The downward trend, in evidence since early 1960, began to reverse itself late in 1964 and continued at a higher level through 1965.

**INDEX NUMBERS OF EMPLOYMENT,
NORTHEASTERN ONTARIO REGION, 1955 TO 1965
(1949=100)**

	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965*
Manufacturing.....	118.8	126.2	131.9	118.6	128.0	126.5	125.4	125.2	121.9	126.1	134.8
Mining	117.2	127.1	146.5	157.4	166.5	153.2	137.0	129.3	119.7	118.4	122.4

*Preliminary estimate.

EARNINGS AND INCOME

Between 1957 and 1963, labour income earned by residents of Northeastern Ontario rose from an estimated \$510.8 million to \$590.4 million, an increase of 15.6 per cent. The largest percentage increase took place in Nipissing (39 per cent) and the largest actual increase in Algoma. All districts except Sudbury reached a higher level in 1963 than in the previous year. Indications are that

NORTHEASTERN ONTARIO REGION

increases were experienced by all districts in both 1964 and 1965, with totals for the Region rising to an estimated \$635 million and \$690 million for the respective years.

About one-third of the Region's total labour income is accounted for by Sudbury District and one-quarter by Algoma. Cochrane contributes about 18 per cent, Nipissing 12 per cent, Timiskaming 8 per cent and Manitoulin less than one per cent.

Per capita labour income of labour income recipients was estimated at \$3,816 for all of Northeastern Ontario in 1963 and \$3,678 for the Province. The District of Algoma showed the highest per capita figure \$4,330, followed by Sudbury \$3,985, Cochrane \$3,625, Nipissing \$3,341 and Timiskaming \$3,228. The lowest per capita labour income was earned in Manitoulin, \$2,481.

The distribution of total personal income varies considerably from district to district within the Region. While for Northeastern Ontario as a whole the group of people receiving less than \$2,000 per annum is estimated to average about 25 per cent of the total number of income recipients (only slightly higher than for the Province), this percentage has apparently been consistently higher in the Districts of Manitoulin (42 per cent in 1963), Timiskaming (30 per cent), Nipissing (29 per cent) and Cochrane (28 per cent). Similarly, while for the Region as a whole it is estimated that 30 per cent of income recipients received \$5,000 or more per annum (27 per cent in the Province), the proportion in Algoma was about 41 per cent, in Sudbury, 33 per cent, Nipissing, 23 per cent, Cochrane, 23 per cent, Timiskaming, 16 per cent and Manitoulin, 14 per cent. These differences reflect differences in employment and wage levels, the degree of industrialization and in some instances the existence of depressed rural areas. It should also be noted that from 1960 to 1963, inclusive, the relative number of recipients receiving less than \$3,000 per annum changed very little, the proportion receiving between \$3,000 and \$5,000 declined and the proportion with \$5,000 or more annual income increased—from 25.5 per cent to 29.6 per cent.

ESTIMATED PER CAPITA ANNUAL INCOME
NORTHEASTERN ONTARIO REGION, 1960 TO 1963

	1960	1961	1962	1963
	\$	\$	\$	\$
A—Clay Belt				
Cochrane.....	3,551	3,561	3,688	3,671
Nipissing.....	3,275	3,408	3,558	3,602
Timiskaming.....	3,396	3,369	3,324	3,441
B—Nickel Range				
Manitoulin.....	2,558	2,710	2,437	2,759
Sudbury.....	3,999	4,061	4,046	4,056
C—Sault				
Algoma.....	4,130	4,090	4,232	4,413
Total, Northeastern Ontario Region.....	3,777	3,809	3,868	3,928
Total, Province of Ontario.....	3,711	3,825	3,932	4,052

Average per capita personal income in Northeastern Ontario was estimated to be \$3,928 in 1963, an increase of four per cent over 1960. This compares with an increase of nine per cent of the Province as a whole.

Personal income tax returns indicate that in 1963, the most current year available, taxpayers in Sault Ste. Marie had higher average incomes (\$5,315) than taxpayers in any of the other 64 Canadian cities listed. Toronto ranked ninth with an average income of \$4,857, Vancouver was eleventh with \$4,811 and Montreal sixteenth with an average of \$4,762. Average income of all taxpayers in the Province was \$4,694 in 1963 and of those in the Region \$4,666. More than one-third of all persons paying personal income tax in Sault Ste. Marie earned at least \$6,000 in 1963 compared with 18 per cent of taxpayers in Sudbury and Copper Cliff combined, 21 per cent of those in the Region and 20 per cent of those in the Province.

According to the 1961 Census of Canada, average family income in Northeastern Ontario in 1961 was \$5,634, compared with \$5,868 in Ontario. The Districts of Algoma (\$6,020) and Sudbury (\$5,973) and the cities of North Bay (\$5,916), Sudbury (\$6,333) and Sault Ste. Marie (\$6,531) were all well above both the Regional and Provincial averages.

Average earnings of male wage earners in only two districts were above the Provincial average of \$3,984, Algoma with an average of \$4,361 and Sudbury with \$4,275. A number of communities, including Iroquois Falls (\$5,587), Kapuskasing (\$5,162), Smooth Rock Falls (\$4,973), North Bay (\$4,095), Englehart (\$4,154), Haileybury (\$4,055), Capreol (\$5,130), Chelmsford (\$4,087), Coniston (\$4,384), Copper Cliff (\$5,360), Espanola (\$4,278), Levack (\$5,169), Lively (\$5,564), Sudbury (\$4,330) and Sault Ste. Marie (\$4,504) were also above the Provincial average.

Average female earnings, however, are above the Provincial average of \$2,119 only in Iroquois Falls (\$2,301), Kapuskasing (\$2,237), Smooth Rock Falls (\$2,344), North Bay (\$2,145) and Copper Cliff (\$2,417).

Average weekly wages and salaries in manufacturing in Northeastern Ontario have risen steadily over the past decade from \$75.32 in 1955 to \$110.09 in 1965. The average for the Province was \$99.57. In mining, the increase in average wages and salaries was from \$74.84 in 1955 to \$105.77 in 1965. Ontario reached a high of \$107.60.

Education

The level of education attained by any individual is of vital importance to his ability to provide an adequate standard of living for himself and his dependants. The same is true of a community. One of the most serious problems facing a large part of the Canadian labour force and an even larger part of the unemployed is the lack of elementary education. With a low level of education, people are unable to find permanent gainful employment in a country which is steadily becoming more and more technologically sophisticated. Some of the "functionally illiterate" are unable even to take advantage of adult education classes or the many rehabilitation courses offered.

In the early days of the development and settlement of Northern Ontario, adequate educational facilities were not always readily available in many communities. Frequently, only the elementary levels were taught. It was thus sometimes necessary to send children many miles away to secure an education for them. This problem is being overcome not only at the elementary and secondary school level but in the fields of higher education.

Although tiny one-room schools still exist in many of the small and remote communities in the North, larger school districts are being established where it is feasible to do so, particularly at the secondary level and pupils are brought into centrally located, well staffed and equipped schools from the surrounding area. Railway school cars, with the co-operation of both the Canadian National and Canadian Pacific Railways, are still being used to assist in the education of children in certain more isolated areas. Technical Institutes and Universities have been established in the North thus making it possible for more young people to continue their education and prepare themselves to take their place in an automated world and to make a more worthwhile contribution to the economy of the country.

In Northeastern Ontario, of the more than 300,000 persons who were five years of age and over in 1961 and were not attending school, six per cent had received no schooling at all, 49 per cent had attended only elementary school, 41 per cent secondary school and 4 per cent university. In the Province as a whole, four per cent of persons in this category had no formal education, 42 per cent had attended only elementary school, 48 per cent secondary school and six per cent university.

Of the total population five years of age and over, 63 per cent had either not attended school at all (4.3 per cent) or had stopped their formal education before entering a secondary school. This compares with 54 per cent of the population in the Province as a whole. Of those who were still attending school at the time of the Census in 1961, five per cent were in kindergarten, 75 per cent in elementary school, 19 per cent in secondary school and 1.5 per cent in university.

Nipissing has a higher proportion of its residents with a minimum of five years secondary education, 10.3 per cent, than any other district. It is followed by Algoma with 9.8 per cent, while Manitoulin has the lowest, 5.3 per cent. This

compares with an average of nine per cent for the Region and 14 per cent for the Province.

The Report of the Minister in 1965 indicates an enrolment of 121,938 pupils in elementary schools (54,590 in public and 67,348 in Roman Catholic Separate Schools) and 30,219 in secondary schools (15,575 in Arts and Science, 6,936 in Business and Commerce, 5,866 in Science, Technology and Trades, 1,575 in Occupational and 267 in Other schools). A total of 5,764 teachers were engaged in teaching these young people.

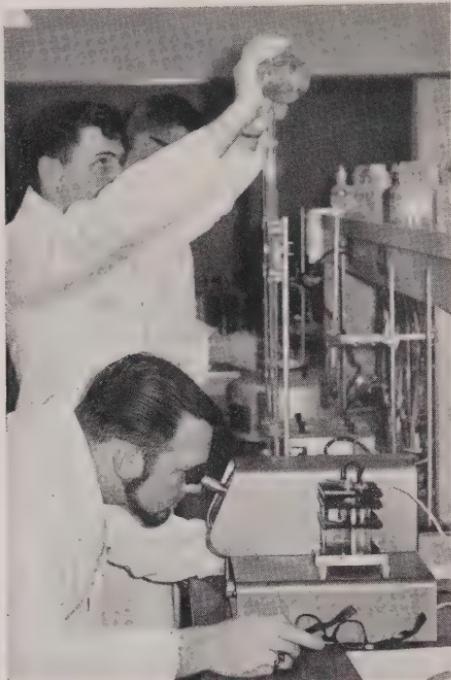
The ratio of teachers to pupils enrolled in the Region, 28 pupils per teacher for public elementary, 29 per teacher in separate elementary and 20 in secondary schools, is very close to the average for the Province. There is very little variation among the Districts although Manitoulin tends, on average, to have one or two pupils less per teacher and Algoma, one or two more.

The Region has 632 elementary (319 public and 313 separate) and 47 secondary schools, also 23 private secondary schools with an enrolment of 2,843. In addition, there is a Business College and a School of Commerce in North Bay and a Business College and a Commercial Institute in Sudbury.

Two Provincial Teachers' Colleges are located in the Region, one in North Bay and one in Sudbury. The Sudbury Teachers' College (along with the University of Ottawa Teachers' College) has been established to train teachers for elementary school classrooms attended by French-speaking pupils where, with the approval of the Minister, both English and French are used as languages of instruction. The North Bay Teachers' College offers the regular one-year and two-year courses leading to Interim Elementary School Teachers' Certificates, valid in the elementary schools of Ontario. In September 1965, 288 persons (61 males and 227 females) were enrolled in the North Bay school and 156 (37 males and 119 females) in the Sudbury school. A new teachers' college at Sudbury, to cost an estimated \$1,675,000, is now in the planning stage.

There are also three technical institutes in Northeastern Ontario. The Provincial Institute of Mining, the only one of its kind in Canada, was opened in Haileybury 20 years ago. It is playing an important role in meeting the demand for trained personnel in the mining industry. Mines have been reporting cutbacks in production because of manpower shortages on a wide front, including miners, mining engineers and technicians.

Until 1964, the school offered only two-year courses. That year it enrolled its first class of three-year students. The additional year will permit the teaching of new subjects and the studying of all subjects in greater depth. Enrolment reached an all-time high of 150 students in the 1965-66 school year, including 85 freshmen. Early in 1966, a \$900,000 expansion program was approved to provide new chemistry, geology and mineralogy laboratories, lecture rooms, gymnasium and auditorium facilities. As a result, capacity of the school will be doubled.



Courtesy — The Northern Ontario Institute of Technology.

Students at The Northern Ontario Institute of Technology, Kirkland Lake

The Northern Ontario Institute of Technology at Kirkland Lake was established in 1962. At that time, diploma courses included instruction in Civil Technology, Electronic Technology and Mechanical Technology. In September 1964, a three-year post-secondary course in Business Administration was offered for the first time. That year, enrolment totalled 237 and there was a faculty of 17 full-time and three part-time instructors. The Institute began its fourth year of operation in 1965 with an enrolment of 386 and a full-time faculty of 23. The second stage of construction, to cost some \$3.5 to \$4 million, is now being planned. It is expected that tenders will be called in September 1966 and that the new building will be completed in 1968.

The Ontario Vocational Centre at Sault Ste. Marie opened in September 1965. Estimated cost of the building, construction of which began in November 1963, is about \$2.5 million exclusive of furnishings and equipment. This centre offers courses in four main divisions: technical courses for apprentices in the certified trades, as designated by the Ontario Department of Labour; pre-employment courses in non-certified trades and trades approved for vocational training under the Dominion-Provincial Technical and Vocational Training Agreement; two-year

engineering-technical courses for secondary school graduates; and post-secondary business and commercial courses. About 600 students can be accommodated.

Laurentian University of Sudbury, a non-denominational, bilingual institution, is Northern Ontario's first university. Established in 1960, it moved into new buildings on a 600-acre campus on the outskirts of Sudbury in 1964. This marked the end of a \$9 million construction program and the first phase of building. It is estimated that another \$14.5 million will be spent by 1970, including a new science building, more classrooms and additional floors for the library. Present facilities can accommodate 1,000 students. About 800 are enrolled in the 1965-66 academic year.

In the Faculty of Arts and Science there are four colleges, each completely autonomous with regard to its own property, finances and internal affairs. Every student in the faculty must register at Laurentian and enroll in one of the Colleges. University College, established in 1960, is a non-denominational college under the direct authority of Laurentian University of Sudbury. University of Sudbury College is a Roman Catholic Arts College originally founded as Sacred Heart College in 1913. All lectures are given in both English and French. Huntington College was established by Huntington University which was founded by the United Church of Canada in 1960. Thorneloe College was incorporated in 1962 on petition of the Anglican Diocese of Algoma.

Under the federating agreements, the denominational colleges may give instruction to their students in Philosophy and Religious Knowledge. Instruction in all



Courtesy — Laurentian University.

Science Building, Laurentian University, Sudbury

NORTHEASTERN ONTARIO REGION

the other subjects in the Faculty of Arts and Science is given in University College. Laurentian University has its own separate identity and constitution and it alone, by virtue of the federating agreements, exercises the right to confer degrees, except in Theology.

Laurentian extension classes are now being given in North Bay, Parry Sound, Sault Ste. Marie and Timmins. The university also has affiliations with some French classical colleges and secondary schools in the Province in which it controls standards for those preparing for a higher education.

The University has pledged itself to the maintenance and promotion of both the French and English language and culture. In some Faculties and Schools parallel courses of instruction will be provided in English and French. At the undergraduate level, the student is invited to choose the language in which he wishes to receive instruction. All the basic prescriptions of his course will be provided in the language of his choice.

Laurentian University has granted affiliate status to the proposed Algoma College in Sault Ste. Marie. The College may possibly be open in time for the fall session in 1967.

The Elliot Lake Centre for Continuing Education, a joint Federal-Provincial project, was established in 1965. The Centre, the first of its kind in Canada, is operated by a Board of Governors, appointed by the Ontario Minister of Education and is financed through the Federal-Provincial technical and vocational training agreement. While most of the students are referred to the Centre through the National Employment Service, all are enrolled under the Canadian Vocational Training program and receive the same training allowances as adults at other CVT centres.

The first 12-week course, begun in June, involved the teaching of basic reading and writing skills to a group of 50 whites and Indians. It was, in a sense, experimental, to determine the best means of teaching groups of people whose educational experience varies from zero to no more than Grade 6. The initial program proved to be extremely successful and a second course, with 70 students, was held later that year. About 100 students attended the third course which began in January 1966.

The Centre hopes eventually to go beyond the teaching of under-educated adults. Plans are under way to develop high-level courses, conferences and seminars in a variety of fields; a special course is being developed for training in data processing and computer equipment along with programming analysis; and a school for fine arts and one for the performing arts are contemplated. Conferences in art and music are already being conducted.

After moving into its new quarters in June 1966, the school was officially opened by the Prime Minister of Canada and the Prime Minister of Ontario. The

new quarters include classrooms, living accommodation, social and recreation areas, and kitchen and dining facilities.

A new education, economic and social centre for Moosonee was announced late in 1965 by the Ontario Minister of Education. The project will be the first of its type in Ontario, providing a full range of instruction from pre-kindergarten classes for Indian children to adult education and community development.

The complex will include the new separate school recently built as a joint Federal-Provincial project at a cost of \$300,000, a new public school and a new building that will include a nursery school, occupational shops, a crafts room, an auditorium and a cafeteria, the whole joined by walkways. Nursery school training will be directed toward instructing Indian children in basic English, thus enabling them to start school later on a par with non-Indian children whose mother tongue is English. The over-all cost of the complex will be about \$2,000,000.

Additional sources of both education and pleasure are the public libraries located in many parts of the Region. There are free municipal public libraries in Elliot Lake, North Bay, Sault Ste. Marie, Sudbury, Kirkland Lake and Timmins. In addition, regional library co-operatives are established in the Districts of Cochrane, Manitoulin, Nipissing, Sudbury and Timiskaming.

Health Services

Thirty-two public hospitals, including four Red Cross Outposts, are located in 28 Northeastern Ontario communities. Six of these maintain training schools for nurses and six (not necessarily the same) provide care for chronically ill patients. Excluding convalescent and chronic units, rated bed capacity for active treatment stood at 2,716 at the end of 1965. More than one-quarter of all these beds are in the City of Sudbury, 16 per cent in Sault Ste. Marie and 11 per cent in North Bay. In other words, half of all the active treatment beds are located in these three cities. Chronic care units, with a total of 208 rated beds, are now operated in six hospitals in the Region. These are located in Cochrane, Haileybury, Kirkland Lake, Sudbury and Sault Ste. Marie. There are no public convalescent hospitals or hospitals for the chronically ill in the Region.

The two largest hospitals in the Region are located in Sudbury and Sault Ste. Marie—Sudbury General Hospital of the Immaculate Heart of Mary, a teaching hospital with 326 active treatment beds, and The General Hospital, Sault Ste. Marie, also a teaching hospital, with 225 active treatment beds and 60 beds for chronically ill patients.

The training of nurses, nursing assistants, laboratory technologists and radiological technicians is provided in a number of hospitals. During 1964, 152 nurses, 38 nursing assistants, 7 laboratory technologists and 18 radiological technicians were graduated.

Private active treatment hospitals are located in Copper Cliff (International Nickel Company Private Hospital), Fort Albany (Ste. Anne's Hospital), Little Long Rapids (Ontario Hydro Hospital), Moosonee (Assumption Private Hospital) and Wawa (Lady Dunn Hospital). Licensed beds in these institutions totalled 86 at the end of 1965. No private chronic care hospitals are located in the Region.

At Moose Factory, the Federal Government operates a hospital primarily for Indians and Eskimos brought in from the far North. Many of these are being treated for tuberculosis. The average number of adult and child patients in the hospital daily is 103.

The Ontario Hospital at North Bay serves not only the whole of the Northeastern Ontario Region, but the District of Parry Sound as well. The Provincial Department of Health subsidizes psychiatric units in the General Hospitals of Sudbury and Sault Ste. Marie. Construction of the Northeastern Psychiatric Hospital at Porcupine, near Timmins, was begun in December 1964. When completed in June 1966, the hospital will accommodate 300 patients. Total cost is expected to be about \$5,250,000.

The Tuberculosis Prevention Branch of the Department of Health maintains district chest clinics in North Bay and Timmins with sub offices in Sudbury and Sault Ste. Marie. The Branch also operates a stationary clinic at Kirkland Lake. These units supervise clinics held in local hospitals that have no X-ray equipment

ECONOMIC SURVEY

PUBLIC GENERAL HOSPITALS IN THE NORTHEASTERN ONTARIO REGION,
DECEMBER 31, 1965

Location	Name of Hospital	Rated Bed Capacity Active Treatment ¹
A — Clay Belt		
Cochrane	The Lady Minto*	60
Hearst	Notre-Dame.....	56
Iroquois Falls	Anson General....	42
Kapuskasing	Sensenbrenner.....	54
Matheson	Bingham Memorial..	29
Smooth Rock Falls	Smooth Rock Falls.....	19
South Porcupine	Porcupine General.....	47
Timmins	St. Mary's.....	169TS
Whitney	Red Cross Outpost (Closed since Dec. 31, 1965).....	4
		480
Nipissing		
Mattawa.....	Mattawa General.....	33
North Bay	North Bay Civic.....	101
	St. Joseph's General.....	200TS
Sturgeon Falls	St. Jean de Brebeuf.....	84
		418
Timiskaming		
Englehart	Englehart and District.....	34
Haileybury	Misericordia*.....	86
Kirkland Lake	Kirkland Lake and District.....	143
New Liskeard	New Liskeard and District.....	41
		304
B — Nickel Range		
Manitoulin		
Little Current	St. Joseph's General.....	45
Mindemoya	Red Cross Outpost.....	16
		61
Sudbury		
Chapleau	The Lady Minto.....	48
Espanola	Espanola General.....	36
Sudbury	St. Joseph's.....	177TS
	Sudbury General Hospital of the Immaculate Heart of Mary.....	326TS
	Sudbury Memorial*.....	210
		797
C — Sault		
Algoma		
Blind River	St. Joseph's General.....	55
Elliot Lake	St. Joseph's General.....	108
Hornepayne	Hornepayne Community.....	13
Richard's Landing	Red Cross Outpost.....	10
Sault Ste. Marie	Plummer Memorial Public*..	213TS
	The General*.....	225TS
Thessalon	Red Cross Outpost.....	14
Wawa	Lady Dunn General.....	18
		656
Total, Northeastern Ontario Region.....		
		2,716

¹Excludes convalescent and chronic units.

TS—Denotes Training School for Nurses.

*Hospitals providing care for chronically ill patients.

NORTHEASTERN ONTARIO REGION

and conduct clinics in other centres that have neither a hospital nor X-ray equipment. In addition, three of the Department's 12 regional laboratories are located in Northeastern Ontario—at North Bay, Sault Ste. Marie and Timmins. These laboratories carry out various tests for local Medical Health Officers and practising physicians.

As large areas of Northern Ontario are without the services of a resident dentist, the Department of Health maintains two railway dental cars, staffed by full-time dentists and assistants. One operates over the C.N.R. from the Quebec border to the Manitoba border and the other over the C.P.R. from Carter to the Manitoba border. Both serve people living along the branch lines as well as the main lines.

County Health Units have been established in four areas in the Region—Porcupine, North Bay and Area, Sudbury and District and Timiskaming. These units are set up to help provide an efficient community health program. The need for public health services in many of the unorganized townships in Northern Ontario has been recognized and will be met as staff becomes available.

In 1963, approximately 400 doctors lived in the Region, i.e. one physician to every 1,100 people. In Sudbury and Nipissing the ratio stood at one to every 1,000 people while in Manitoulin it was one to every 1,773. In the Province as a whole, the ratio was one physician to every 776 persons. While Northeastern Ontario compares unfavourably with the Provincial average, it is much better off than parts of Eastern Ontario where, for example, in Lennox and Addington, Prescott and

DISTRIBUTION OF PHYSICIANS AND DENTISTS,
NORTHEASTERN ONTARIO REGION, 1963

	Total Physicians	Specialists	General Practitioners	Ratio of Physicians to Population	Total Dentists	Ratio of Dentists to Population
A—Clay Belt						
Cochrane.....	63	14	49	1:1,257	13	1: 6,091
Nipissing.....	63	22	41	1:1,018	20	1: 3,207
Timiskaming.....	37	8	29	1:1,209	4	1:11,179
Sub-total.....	163	44	119	1:1,154	37	1: 5,082
B—Nickel Range						
Manitoulin.....	4	1	3	1:1,773	2	1: 3,547
Sudbury.....	147	65	82	1:1,014	33	1: 4,516
Sub-total.....	151	66	85	1:1,034	35	1: 4,461
C—Sault						
Algoma.....	88	24	64	1:1,126	27	1: 3,671
Total, Northeastern Ontario Region.....						
Total, Ontario.....	402	134	268	1:1,103	99	1: 4,478
Total, Ontario.....	7,982	3,243	4,739	1: 776	2,514	1: 2,463

Source: Ontario Medical Association
Royal College of Dental Surgeons of Ontario

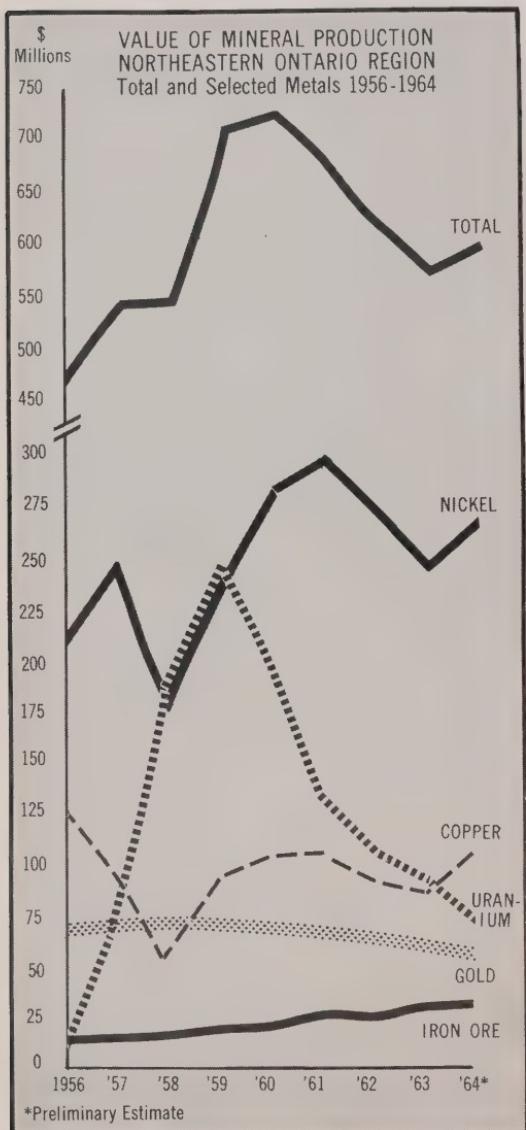
Russell, Northumberland and Durham the physician-population ratio ranges between 1:2,100 and 1:3,100. Approximately one-third of the doctors in the Region are specialists.

Ninety-nine dentists were practising in the Region in 1963, i.e. one to every 4,478 residents. This compares with the Provincial average of 1 to 2,463. The ratio of dentists to population varies from district to district, with Nipissing experiencing the lowest, 1:3,207 and Timiskaming the highest, 1:11,179. The ratio in Lennox and Addington that year was 1:7,896, in Haliburton 1:8,359 and in Prescott and Russell 1:12,055.

Mining

Northeastern Ontario, underlain for most of its 105,000 square miles by the mineral rich rock formations of the Canadian Shield, ranks first among the Province's ten economic regions in mineral production. Nearly \$11.5 billion worth of minerals has been extracted from its ores from the commencement of mining

operations in the first decade of this century to the end of 1964.



The Region's mineral reserves are widely dispersed. The main source of nickel, copper and platinum metals is in the Sudbury basin—Canada's foremost mining area. The main centres of gold production are Porcupine, Kirkland Lake and Larder Lake. Iron ore is produced in the areas around Wawa, Sudbury, Kirkland Lake and Timagami; uranium is found in large quantities at Elliot Lake; and silver and cobalt are produced in the famous Cobalt-Gowganda silver camps.

In the years between 1954 and 1964, inclusive, the value of mineral output in the Region rose by about 57 per cent. Two years within this period, 1959 and 1960, showed outstanding achievement, the value of mineral production in both years being nearly double the 1953 level. Although in subsequent years production suffered a setback, due primarily to a decrease in demand for uranium and a large build up of inventories of copper and nickel, an upward trend has been in evi-

dence since early 1964, the result of increased demand and higher or more stable prices for metals. The value of mineral production in that year rose to \$582.5 million—an increase of 1.5 per cent over 1963.

**GROSS VALUE OF MINERAL PRODUCTION,
NORTHEASTERN ONTARIO ECONOMIC REGION,
SELECTED MINERALS, 1956 TO 1964**

Mineral	1956	1957	1958	1959	1960	1961	1962	1963	1964
(Thousands of Dollars)									
Nickel.....	208,099	243,518	177,169	240,053	277,924	295,423	274,220	245,049	265,169
Uranium.....	9,362*	71,489	191,158	246,196	195,270	136,277	106,591	96,116	61,372
Copper.....	128,552	92,362	54,017	93,893	104,686	105,080	94,397	87,428	106,502
Gold.....	68,647	67,627	71,992	70,130	71,521	70,767	66,269	63,087	59,208
Platinum Metals.....	22,407	25,731	14,321	16,932	28,872	24,534	28,848	22,585	25,404
Iron Ore.....	12,613	14,545	15,725	20,401	21,135	28,322	25,655	32,157	40,009
Silver.....	5,887	5,476	6,635	7,381	8,200	6,446	7,991	9,245	9,965
Asbestos.....	3,930	3,530	3,849	4,328	4,129	4,363	5,687	5,373	2,200
Cobalt.....	8,782	7,541	4,867	5,414	6,313	4,310	4,766	4,409	4,259
Sand and Gravel.....	2,554	2,839	2,303	2,619	5,374	3,427	5,206	4,541	3,697
Total,									
Selected Minerals	470,832	534,658	542,036	707,347	723,424	678,949	619,630	569,990	577,785
Total, All Minerals	476,223	538,760	544,951	711,895	727,976	682,846	624,072	573,622	582,458
Selected Minerals as % of the Region's Total Value of Mineral Production	98.9	99.2	99.5	99.4	99.4	99.4	99.4	99.3	99.4

*Includes the production of Balfour Uranium Mines Limited in the Bancroft area.

Immediately following World War II, when new secondary and service industries came into the Region, the mining industry not only expanded but gained considerably in its relative importance. While in 1951, it employed fewer than 25,000 people or 18 per cent of the Region's labour force, in 1961, it employed about 32,000 people or 19 per cent. The only other groups to improve their relative position were the tertiary industries, i.e. trade and services. The value of mineral production per mining employee also rose in the same period, from \$13,832 to \$21,480.

The large output and rapid growth of the mining industry has strengthened the economic position of the Region. It has resulted in increased employment both directly and in related industries, provided new outlets for the manufacture of mining machinery and equipment and for the products of farms and forests, furnished new sources of transport revenue, stimulated expansion of the construction industry and provided strategic materials for national defence.

NICKEL

In 1961, the production of nickel in the Region rose to an all-time record of over 392 million pounds, valued at \$295.4 million. This accounted for 84 per cent of the Canadian and 64 per cent of the Free World's total production. In the



Courtesy — Hollinger Consolidated Gold Mines, Limited.

Miners installing timber in a mine stope

fourth quarter of 1962, as a result of surplus capacity and some excess of production over consumption, two major nickel producers, The International Nickel Company of Canada Limited and Falconbridge Nickel Mines Limited, reduced their operations by 13 per cent and 17 per cent, respectively. Consequently, the 1962 nickel output decreased to 333.2 million pounds, valued at \$274.2 million, accounting for over 57 per cent of the Free World production. As reduced operations continued throughout 1963, nickel production continued to decline, to 295.4 million pounds, valued at \$245 million or 52 per cent of the Free World production. Early in 1964, some 50 per cent of the cut-back in production was reinstated and production for the year rose to \$265 million. During 1965 both companies operated at full capacity.

A large part of the nickel produced in the Region is exported, mainly to the United States and the United Kingdom. In 1964, consumption of nickel in the Free World reached an all-time high of approximately 640 million pounds—an increase of twelve per cent over the 1963 level. Production capacity in 1964 approximated 705 million pounds a year while actual production amounted to some 646 million pounds. Substantial increases in both capacity and production are anticipated in 1965. Canadian nickel production in 1965 is estimated at 522 million pounds, valued at \$435 million.

The development of new uses and new markets for nickel is vitally important to the Canadian nickel mining industry. To further the market development program, Canadian producers are extending their existing research facilities. Early in 1964, Falconbridge Nickel Mines Limited opened a new Metallurgical Laboratory at

Thornhill, Ontario, and International Nickel is building research facilities in Sheridan Park, the Ontario Research Community outside of Toronto. Both process and product research will be undertaken there. This continued research and subsequent technological progress benefits the entire nickel industry through the development of a multiplicity of new and expanding uses and a consequent strengthening of demand.

At the end of 1965, The International Nickel Company of Canada Limited was operating seven mines and two open pits in the Sudbury area. In addition, five mines were under development—Totten mine is scheduled for completion in 1966, and Coleman, Kirkwood, Copper Cliff North and Little Stobie mines are expected to become operational in 1967. In September, 1965, the sinking of the deepest single shaft in the Western Hemisphere began in the 65-year-old Creighton mine. The shaft will be sunk about a mile and a half below the surface to permit the mining of an important ore body. At the same time, the Company announced a \$79 million expansion program which will add "some 20 million pounds of nickel and like quantities of copper" to its annual Sudbury producing capacity. The major portion of this new capital program is expected to be completed by the end of 1967.

The program includes the construction of a 22,500 tons of ore a day mill adjacent to the Frood-Stobie mine and a four-mile pipeline for the transfer of concentrates from the mill to the smelter at Copper Cliff. Another phase of the program includes extensive development of the Frood-Stobie mine and the opening up of an entirely new mine to be named the Little Stobie.

The Region's second largest copper-nickel producer, Falconbridge Nickel Mines Limited, also announced in 1965 that its productive capacity would be increased from the present 75 million pounds to 100 million pounds annually by late 1967 or early 1968 with the construction of additional concentrating, smelting and refining facilities. In 1965, the Company was developing its Strathcona mine where a 6,000-ton-per-day mill is scheduled for production in late 1967. In addition, the new North mine was being developed from the underground levels of Fecunis mine and diamond drilling continued at the Lockerby mine property. Capital expenditure in 1965 reached an all-time high of \$20.5 million.

COPPER

In the Region's main copper mining area near Sudbury, copper and nickel are the two main components of the ore which also contains about twelve other minerals. In the Timmins copper-producing area, zinc is the second major component. Although the existence of component minerals in the ore tends to diminish risk and cut down the cost of mining normally involved in the extraction of a single mineral, it also makes the production policy for each individual mineral less flexible since a change in the rate of production of one automatically affects the rate of production of all others. Consequently, the excess capacity in relation to demand which caused the cut-back in nickel production also brought about a decline in the

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Region's copper output. In 1963, copper production stood at 279.3 million pounds, valued at \$87.4 million and accounted for 78 per cent of Ontario's and 31 per cent of Canada's production of this metal. Compared with 1961, the Region's 1963 production was 84.6 million pounds short—a decrease of 23.3 per cent. In 1964, copper production rose to more than 321 million pounds, only 11.8 per cent less than in 1961, while the value of production reached \$106.5 million, the highest since 1956.

Although in 1964 the Sudbury basin accounted for 88.6 per cent of the total copper output in the Region, copper production and especially the development of new copper-bearing ore bodies in other parts of the Region were very significant. In all districts except Manitoulin, which has no known metal ores, copper production has increased considerably. In Cochrane District, for example, copper output rose from less than six million pounds in 1961 to more than twenty million pounds in 1964.

In 1963, McIntyre-Porcupine Mines Limited, essentially a gold producer, began milling copper ore in a converted section of its mill at Schumacher near Timmins, at the rate of 1,000 tons per day and shipped the copper concentrate to the INCO smelter. In addition, Kam-Kotia Porcupine Mines Limited has completed a major portion of its expansion program, increasing its plant's daily capacity to 1,750 tons of ore from which copper concentrate is produced. A section has also been added to the copper plant for the recovery of zinc concentrates from the copper circuit tailing. The copper concentrate is being shipped to Noranda for smelting.

Early 1964 witnessed a major copper-zinc-silver discovery in Kidd Township, northwest of Timmins. The find's main ore body, averaging about 1.33 per cent copper, 7.08 per cent zinc, and 4.85 ounces of silver per ton, has been estimated at more than 62½ million tons. Texas Gulf Sulphur Company Incorporated, the discoverer of this deposit, is proceeding with a \$60 million program to start open-pit mining operations by the fall of 1966. The 6,000-ton-a-day concentrator is now under construction in Hoyle Township.

Extensive exploration in other parts of the Region followed the Texas Gulf discovery in the Timmins area. A promising exploration program has been launched in the Batchawana area, about 35 miles north of Sault Ste. Marie. Grab samples from some of the copper showings contained from 0.12 to 19.54 per cent copper. In addition, the samples with the highest copper content contained up to 7.29 ounces silver per ton. Tribag Mining Company Limited discovered a body of copper mineralization in the area sufficient to warrant underground exploration and development. This find further stimulated prospecting in the area. In November 1965, Sheridan Geophysics, Limited's copper mine at Mamainse Point near Batchawana was brought into production at a cost of about \$2 million. The mine is leased from Coppercorp Limited.

In the Timmins area, early in 1966, Canadian Jamieson Mines reached full mill capacity of 400 tons per day at its copper-zinc project in Jamieson Township. Both zinc and copper concentrates will be produced, the former going to Germany and the latter to Sweden. Later in the spring of 1966, Genex Mines Ltd. started tuning up the 200-ton-per-day mill at its copper property in Godfrey Township, west of Timmins.

Rio Algoma Mines Limited, essentially a uranium producer, operates the Pater group of 23 claims. The copper ore is being concentrated in the converted Pronto Uranium plant at a rate of 700 tons daily. Since 1963 the concentrates have been treated at INCO's Copper Cliff smelter. A new development program to be completed by mid-1966, at a cost of \$1.3 million, will make available an additional 900,000 tons of ore containing about two per cent copper and will extend the life of the mine to at least 1970.

Copperfields Mining Corporation Limited (formerly Temagami Mining Company Limited) operates a mine on Timagami Island, in Lake Timagami. New ore of undisclosed tonnage has been indicated in the Philips Bay Zone. On June 30, 1964, ore reserves amounted to 107,263 tons averaging 6.8 per cent copper plus an additional 25,000 tons inferred, averaging 5 per cent copper.

URANIUM

Uranium as a source of energy has had a tremendous impact on the technical progress of the modern world, progress which has earned for the current century the appellations nuclear and space age. In addition to its military applications, the high energy yield from the fission of uranium is the key to economic nuclear electric power. Among its many other uses, uranium can propel ocean-going vessels (the reactor as now conceived would weigh about 400 tons and produce 30,000 shaft horsepower), and research shows promise of its economical use as an anti-corrosion agent, an alloying agent, a catalyst to remove impurities from steel, and as colouring agent in ceramics and glass. Moreover, since the discovery of fission and the consequent means of producing a large variety of radioactive isotopes, the use of radioactivity has increased rapidly.

Canada is one of the leading countries in the nuclear field, devoting a large part of its efforts to the technology and engineering of nuclear power reactors. In 1945, the ZEEP (Zero Energy Experimental Pile) reactor was built, operating at 10 watts energy, which made possible a study of the heavy water-natural uranium system. Two years later, the NRX (National Research X-Metal) went into operation, and even today, this reactor plays a leading role in enabling the determination of fundamental properties of matter, producing radioactive isotopes, and making possible important experiments for the development of atomic power. The NRU (National Research Universal), another natural uranium-heavy water reactor was built in 1956. It produces significant quantities of plutonium (from Uranium-238), radioactive isotopes, particularly Cobalt-60, and has advanced research and experimental facilities.

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Canada's first step towards the utilization of nuclear energy for the generation of electricity was taken in 1956 when construction of the 20,000-kilowatt Nuclear Power Demonstration Station (NPD) was begun at Rolphton, 140 miles northwest of Ottawa. This was a joint undertaking of The Hydro-Electric Power Commission of Ontario, Atomic Energy of Canada Limited and the Canadian General Electric Company. Completed in 1962, this pilot plant provided experience in the design and operation of a nuclear power station. It now operates as a research laboratory. It was the world's first nuclear-electric station to use the combination of natural uranium as a fuel in a reactor moderated and cooled by heavy water.

Canada's first major nuclear power station is nearing completion at Douglas Point, on the shore of Lake Huron between Port Elgin and Kincardine. The 200,000-kilowatt, single-unit plant is scheduled to be in operation by the end of 1966. In September 1965, construction began on the largest nuclear-electric plant now planned or under construction in the Western Hemisphere. It is located in Pickering Township, east of Toronto. The \$266 million plant will initially have two generating units to produce 1,080,000 kilowatts by 1970. Its design allows for easy extension and the addition of two or more units would raise capacity to about 3,000,000 kilowatts. Total investment for the enlarged plant would amount to some \$500 million. This project is being co-operatively financed by the Province of Ontario, the Government of Canada and Ontario Hydro. It is being built by Ontario Hydro with Atomic Energy of Canada Limited acting as design consultant.

The advancement of nuclear science has sparked the development of uranium mining. Conversely, the discovery of rich and extensive uranium reserves had considerable impact on the program and extent of nuclear research. One of the world's largest uranium ore reserves, accounting for about 95 per cent of Canada's known reserves of that mineral, is located in the Elliot Lake area in Northeastern Ontario. The proven ore reserves in this camp have been estimated at 143 million tons averaging 2.4 pounds of uranium per ton. The inferred or possible ore reserves in the area will eventually add about 30 per cent to this figure.

Commercial production of uranium in Northeastern Ontario commenced in 1956, with an output valued at some \$8 million. In the following years production increased sharply—to \$71.5 million in 1957, and to a record \$246.2 million in 1959. Subsequent years witnessed a gradual decline in production, the value of which fell to \$195.3 million in 1960, to \$106.6 million in 1962, to \$96 million in 1963 and to \$61.4 million in 1964. To relieve the hardships in the uranium mining communities caused by the decreased demand for uranium, the closure of some mines and the imminent closure of others, the Government undertook to stockpile this valuable mineral. In 1964, the stockpile amounted to 2,683 tons of U₃O₈ valued at \$24.4 million. Under a new stockpiling program launched in 1965, the Government will purchase up to 7,000 tons of U₃O₈ over the next five years from each of Denison Mines and Rio Algom Mines.

Rio Algoma Mines is building a 150 ton per year uranium refinery at its Nordic mine site at Elliot Lake. This will be the first non-government-owned uranium refinery in Canada.

The new facility will refine uranium oxide to reactor grade, sinterable uranium dioxide which is fashioned into fuel rods for use in nuclear reactors employing natural uranium fuel. During 1966 the refinery will be used primarily for continuing process development and to fill small commercial orders. Full commercial operations will not begin until 1967.

The outlook for the uranium mining industry is closely linked to the future demand for nuclear fuel, essentially for power generating purposes. Although great progress has been made in the devising of nuclear reactors, the time element plays a predominant role in final designs, safety measures, authorization for construction and construction itself of these nuclear power generating stations. Informed sources forecast an upswing in demand for uranium by the early 1970's, and possibly a world shortage by 1980. This would suggest that a time of prosperity for the uranium mining industry is not far away. On the other hand, the development of fast-breeding reactors fuelled with plutonium (a man-made element "bred" in a reactor fuelled by a core of uranium-235 blanketed by natural uranium) can prolong the utilization of uranium reserves considerably.

G O L D

In 1964, 73 per cent of the total gold output in Ontario, and 40.9 per cent of that of Canada was produced in Northeastern Ontario. The Region's gold production of 1,568,426 ounces valued at \$59.2 million was, however, six per cent lower than in 1963. In 1965, twelve gold mines were operating in Cochrane District, four in Timiskaming and one in Sudbury. Gold was also produced in a number of base metal mines, the largest of which were operated by International Nickel and Falconbridge Nickel Mines.

GOLD PRODUCTION IN NORTHEASTERN ONTARIO REGION, GOLD MINES AND OTHER PRODUCERS, 1964

<u>Area</u>	<u>Gold Ounces</u>	<u>% of Total</u>	<u>Value \$</u>
Cochrane.....	981,195	62.6	37,040,161
Nipissing.....	1,063	0.1	40,113
Timiskaming.....	507,036	32.3	19,152,020
Sudbury.....	78,408	5.0	2,948,499
Algoma	724	*	27,331
Total, Northeastern Ontario Region.....	1,568,426	100.0	59,208,124

*Less than 0.05.

Gold mining operations in the area around Matachewan have always been generally of a marginal nature, so that the mines have been forced to suspend operations owing to the fixed (since 1933-1934) price for gold and the rising cost

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of production. In Cochrane District, Delnite Mines Limited hoisted the last of its ore on August 12, 1964, bringing to an end a 27-year-long fruitful life, and the big Timmins mine of Hollinger Consolidated Gold Mines is due to close shortly. In Timiskaming District, a rockburst hastened the end for Wright Hargreaves Mines Limited which began producing in 1921, and also for Lake Shore Mines which treated Wright Hargreaves' ore; both these mines ceased production early in 1965. On the basis of studies made jointly by Lake Shore and Wright Hargreaves which showed the commercial feasibility of retreating old mill tailings, it was decided to prepare facilities for treating up to 2,000 tons per day. Initial operations will be on Lake Shore ground.

The Emergency Gold Mining Assistance Act passed by Parliament in 1948, made it possible for some of the high cost or marginal mines to obtain financial assistance. The Act, which was to terminate in 1950, has been extended several times, the latest extension covering the period from 1964 to 1967, inclusive. One new provision in the Act excludes from assistance new lode gold mines which come into production after June, 1965, unless at least one-half of the employees of such mines reside in one of the communities designated under the Act as a gold mining community. In Northeastern Ontario, these communities are: Larder Lake, Virginiatown, Kirkland Lake, King Kirkland, Holtyre, Timmins, Schumacher, South Porcupine, Pamour, Renabie and Matachewan. Some measure of relief was also accorded the gold mining industry by the devaluation, early in 1962, of the domestic dollar in terms of United States funds.

In recent years, the use of gold for technological purposes has been increasing steadily. A substantial portion of gold goes to the electrical and electronic industries. Other applications range from nuclear power installations to delicate surgical instruments. It is gold's electrical conductivity, solderability and resistance to corrosion that makes it an ideal engineering material. New applications are being studied. Projects under way include evaluation of the use of gold as a diffusion stop for hydrogen and studies of transparent gold films on non-metallic surfaces.

The price ceiling on gold has not prevented prospectors and developers from exploring new possibilities. Teck Corporation Limited, for example, undertook to develop the gold deposits on the property of Tegren Goldfields Limited in 1965. The mine is scheduled to commence production in 1968 at a cost of \$3.5 million. An increase in the official price of gold, however, would considerably change the outlook for the gold mining industry. Such an increase would make possible the extraction of lower-grade ore and would stimulate prospecting for and development of additional gold deposits. A more realistic price for gold would be the logical consequence of its increasing use for industrial purposes.

IRON ORE

In 1964, 3.5 million tons of iron ore or 43.6 per cent of Ontario's total output came from Northeastern Ontario. The major producer in the Region is the Algoma Ore Properties Division of The Algoma Steel Corporation, Limited. In its mine

and sinter plant in the Wawa-Michipicoten area, north of Sault Ste. Marie, it produces siderite containing 34.3 per cent iron both from open pit and underground mines. The ore is beneficiated by sink-float and sintered to increase its iron content to 50.64 per cent. The production of sinter from these iron ore properties increased from 1,460,000 tons in 1962 to 1,618,000 tons in 1963, and to 1,781,000 tons in 1964. Early in 1966 a \$3.3 million sintering machine with a yearly capacity of one million tons of sinter, was put into operation. In 1963, the company was engaged in the exploration and testing of its Goulais River low-grade magnetite property, north of Sault Ste. Marie, which contains some 150 million tons of ore. The company is reported to be giving serious consideration to building a pelletizing plant in its Goulais range. The planned pellet product would contain about 65 per cent iron.

Another iron ore producer in the Region is Lowphos Ore Limited, Capreol, associated with the National Steel Corporation and the M. A. Hanna Company. It produces magnetite containing 31.54 per cent iron from an open pit mine and, since mid-1963, has produced iron pellets grading 60.04 per cent iron. In 1963 the production of iron concentrates and iron pellets amounted to 583,144 tons while in 1964, 616,409 tons of iron pellets were produced.

Two major companies produce iron as a by-product of their nickel-copper operations. The International Nickel Company produces iron oxide pellets (68 per cent iron) from pyrite and pyrrhotite flotation concentrate. Its shipments amounted to some 280,000 tons in 1962, 504,000 tons in 1963 and 807,000 tons in 1964. In 1964, following a \$50 million expansion program, the plant's annual capacity was brought up to about 800,000 tons of high-grade pellets. Falconbridge Nickel Mines Limited, also recovering iron as a by-product, recently doubled its capacity to produce up to 100,000 tons of iron oxide calcine (67-68 per cent iron) annually from the treatment of pyrrhotite flotation concentrate.



Courtesy — The Eddie Duke Studio.

The Adams Mine, Jones and Laughlin Steel Corporation, near Kirkland Lake

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A major development has taken place in Boston Township, Cochrane District. The Jalore Mining Company Limited (a wholly owned subsidiary of the Jones and Laughlin Steel Corporation) completed construction of its Adams mine, concentrator and pellet plant near Kirkland Lake. The \$30 million project began production in December, 1964, with an anticipated annual output of one million tons of pelletized iron concentrate.

In 1965, another major iron project was initiated in the Region: The Sherman mine at Timagami. This is a joint project of Dominion Foundries and Steel Company (90 per cent interest) and of Cliffs of Canada Limited (10 per cent interest), which will operate the property. Mining will be done by the open pit method and 3½ million tons of iron ore will be processed, annually, to produce one million tons of iron pellets, grading 63 per cent iron. The access roads, railway lines and service buildings on the Sherman mine property of Strathagama Mines Limited were completed in 1965, and in 1966, the construction of the iron pellet plant will begin. The mine is scheduled for production in early 1968 and will employ about 300 people.

Also in the Timagami area, underground work was resumed at the iron property of Eagle Rock Iron Mines Limited. The property contains an estimated 188 million tons of ore to a depth of 800 feet or 328 million tons to 1,400 feet below a diabase capping, averaging about 27 per cent of soluble iron. There is a complete mining plant on the property, although the mine access road will have to be upgraded before full-scale operations are resumed.

In McNaught and Lacner townships, large deposits of ore containing titaniferous magnetite, apatite and columbium have been discovered, and in 1958 about 30,000 tons of iron were mined by Multi-Minerals Limited. Among other iron ore developments continuing in the Region, the most significant are the exploratory works in the Kukatsh area and on a 50,480-acre limit in the Moose River Basin.

With the increase in ore supply and technological advances in iron ore processing and steel production, the quality of the ore in demand by steelmakers has changed. The trend to iron pellets is very pronounced, and it now seems likely that such processing will be the minimum pattern for the North American market. This trend will help to bring about the full utilization of the low-grade iron ores abundant in Northeastern Ontario.

COBALT AND SILVER

The Northeastern Ontario Region accounts for all cobalt production in Ontario. Some 96 per cent of the output originates in the Sudbury area, the remainder in Timiskaming District. In 1964, more than 2.2 million pounds valued at nearly \$4.3 million were produced in these two areas. Cobalt is obtained as a by-product of the smelting and refining of nickel-copper ores at Sudbury and of silver refining at Cobalt.

The International Nickel Company of Canada produces high-purity electrolytic cobalt in its refinery at Port Colborne and cobalt salts and oxides in the United

Kingdom. Falconbridge Nickel Mine produces electrolytic cobalt in its refinery in Norway. Cobalt Refinery Limited at Cobalt produces a black cobalt oxide of 70-71 per cent purity and a mixed cobalt and nickel oxide that contains approximately 40 to 45 per cent nickel and 20 to 25 per cent cobalt. The company is investigating the possibility of processing lower grade silver-higher grade cobalt ores to increase cobalt production in Timiskaming.

Some 7.1 million ounces of silver valued at about \$10 million were produced in 1964 in the Region, accounting for nearly 72 per cent of the Ontario output of this metal and nearly 24 per cent of that of Canada. Timiskaming District is the leading producer with an output of some 5.4 million ounces annually. In Sudbury District, the 1.5 million ounces of silver produced in 1964 were, for the most part, by-products of the International Nickel Company's base metal production. In Cochrane District, silver is mined in conjunction with gold. In 1964, 221,876 ounces were mined, valued at \$310,626.



Courtesy — Ontario Department of Tourism and Information.

Silver Miller Mine, Cobalt

Free World consumption of silver in 1964 is estimated at 550.3 million ounces or twice the Free World output of this metal. Consumption in the following years has continued to outstrip production. This increased demand for silver, due mainly to an expanding range of industrial applications has resulted in a rise in the Canadian price to about \$1.40 per ounce and has boosted interest in former silver-producing properties in the Cobalt-Gowganda area. Properties abandoned several years ago have been dewatered, re-examined and put back into operation. In 1965, in addition to the 25 currently producing companies, seven companies were developing new mines in the area.

NORTHEASTERN ONTARIO REGION

OTHER MINERALS

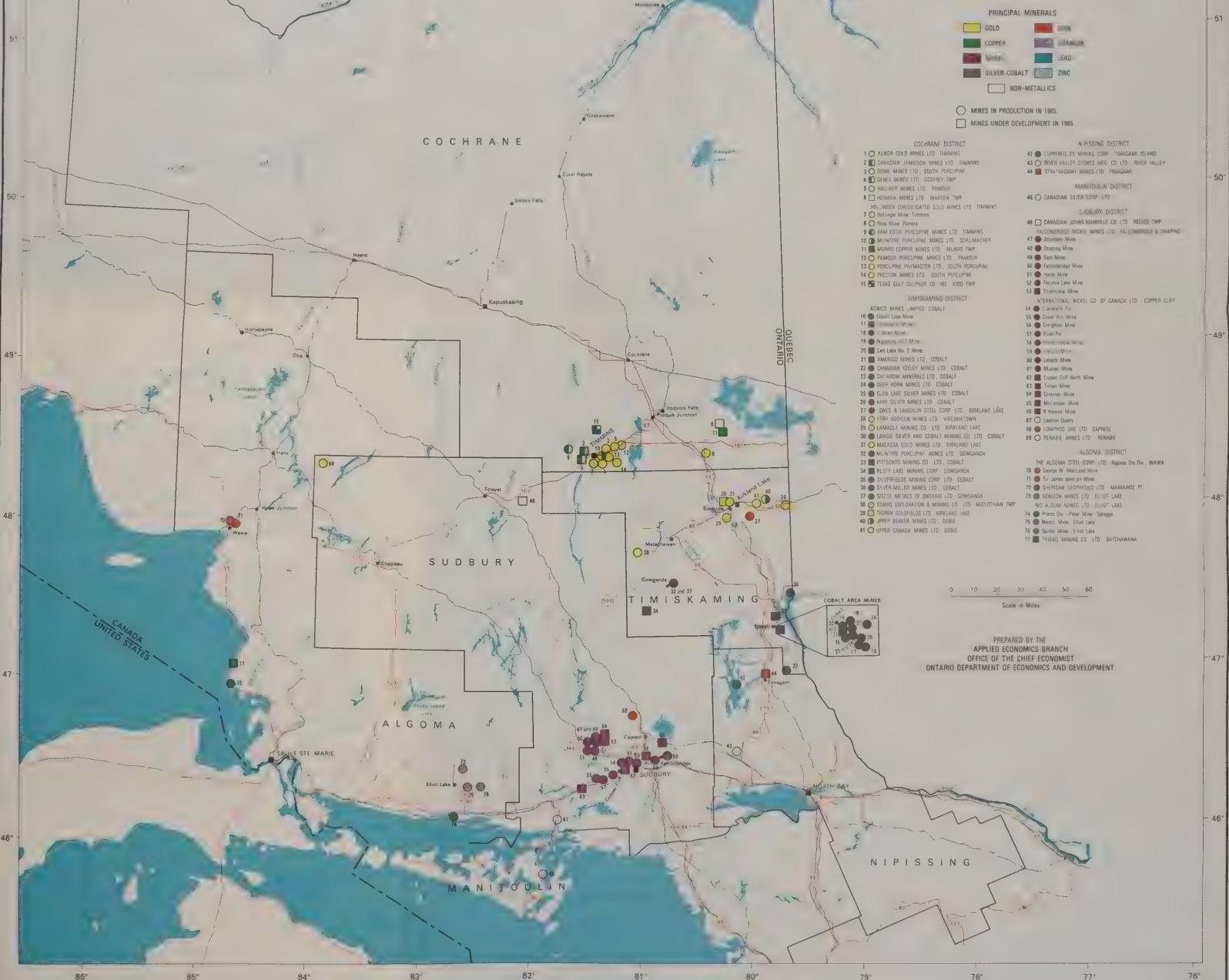
The Sudbury Basin is the world's largest source of platinum metals. In 1964, 376,238 troy ounces valued at over \$25.4 million were produced in the District. Platinum metals are valuable to industry because of their specific properties, the chief of which are: catalytic activity, resistance to corrosion, resistance to oxidation at elevated temperatures, high melting points, strength and ductility. The principal platinum metals are platinum and palladium. Iridium, ruthenium and rhodium are used mainly to modify the properties of the former. Rhodium is also used in rhodium plating. The production of Canada's platinum metals is primarily associated with the treatment of nickel ores in Sudbury. In 1964, the Region's output of platinum metals contributed about 33 per cent of the world's production.

The Sudbury Basin is also an exclusive Ontario producer of two important rare elements, namely selenium and tellurium. Selenium is a grayish semi-metal with a semi-metallic lustre and electrical properties. Tellurium is also a semi-metal and exhibits semi-conductor properties. This steel gray, brittle substance is more inclined to form compounds with other metals than is selenium. The International Nickel Company of Canada, Limited, operates a selenium and tellurium-recovery plant at Copper Cliff where commercial production is obtained from the treatment of tank muds-residues from the electrolytic refining of copper anodes. In 1964, the production of selenium amounted to 104,905 pounds valued at \$508,789 and the output of tellurium amounted to 7,900 pounds valued at \$51,350. Selenium is widely used by industry in electronics, glass, rubber, alloy steel making and pharmaceuticals, and tellurium is being consumed in increasing quantities because of its application in thermal-electric devices. Yttrium oxide, a rare earth compound recoverable as a by-product of uranium and thorium extraction operations, is being produced at Elliot Lake by Rio Algom Mines. It is expected that the compound will be sold in concentrate form initially to refineries in the United Kingdom and the United States. Yttrium oxide is required in the manufacture of colour television tubes.

Quartz operations are carried on in both Sudbury and Manitoulin districts. Prominent producers are INCO's Lawson Quarries and the Canadian Silica Corporation quarries on Manitoulin Island. In the River Valley area, black granite is being quarried and fashioned into curling stones. Since the only other deposit of black granite from which curling stones are made (an island off the coast of Scotland) is almost depleted, this venture could become a sizeable industry.

In 1963, Kam-Kotia Mines, Limited, a copper producer, commenced production of zinc concentrates, making its first shipment in November of that year. The following year, production amounted to 3,319 tons of concentrate containing 1,270 tons of zinc. The Region's zinc production will increase considerably when, in 1966, Texas Gulf and Canadian Jamieson begin operations. Canadian Magnesite Mines Limited continued investigations concerning its magnesite deposit in Deloro and Adams townships, south of Timmins. Diamond drilling has outlined a considerable tonnage containing about 50 per cent magnesite of low calcium oxide content.

MINING IN THE NORTHEASTERN ONTARIO REGION



In 1964, the company conducted pilot plant tests at the Nova Beaucage plant in North Bay and erected a multiple hearth furnace for calcining concentrates. In the Moose River Basin a significant find of gypsum acid caslin holds good promise for this far away area.

In 1965, Multi-Minerals Limited signed an agreement with a German firm for construction of a semi-commercial pilot plant for the manufacture of phosphoric acid. Columbium and the phosphorus bearing mineral apatite, have been outlined on the company's property near Chapleau. This project, when completed, will mark the beginning of a Canadian phosphate industry, utilizing Canadian reserves. It is hoped that columbium may be recovered as a by-product. Other columbium-uranium deposits are found in an area covering the Manitou Islands of Lake Nipissing. The reserves in the zone east of Newman Island are reported to amount to 2.7 million tons, averaging 0.69 per cent columbium (Cb_2O_5) and 0.042 per cent uranium oxide.

In 1963, some 33,715 tons of asbestos valued at \$5.4 million were mined in the District of Cochrane and processed in Matheson. In August 1964, production at the Canadian Johns-Manville plant was suspended and the plant converted to a test mill to test material from asbestos deposits under development in Reeves Township, west of Timmins. In the spring of 1966 development of a mining and milling operation was announced by the company. Production of asbestos fibre is scheduled to start in 1968 at an annual rate of 25,000 tons. A plant has been operated at Matheson by Hedman Mines for the past couple of years to produce short asbestos fibre from its property in Warden Township, east of Matheson.

The rapid increase in prospecting activities which has occurred in the Northeastern Ontario Region may open up new areas and result in a rate of development that will surpass past records. It is encouraging to note that the total number of recorded claims in the Region increased from 8,726 in 1961 to 43,316 in 1964 and represents over 84 per cent of the total number recorded in the Province of Ontario. The historic discovery of the Texas Gulf Sulphur Company Incorporated, early in 1964, is shaping into one of the most remarkable ore bodies in Canada. It sparked an exploration and staking rush unsurpassed in the annals of the area thus confirming the widespread belief that the Region's mineral potential has been barely tapped.

Forestry and Forest-Based Industries

THE FORESTS

The forests of the Northeastern Ontario Economic Region are not homogeneous—eight softwood and six hardwood species are indigenous to the Region and present in commercially important quantities. The distribution of the various species is affected primarily by physiographic formations and climatic conditions although types of forest cover also reflect the silvical characteristics of the species and such physical events as fire and cutting.

The sub-Arctic area of the Region, primarily because of its low temperatures and poor drainage conditions, has little in the way of commercially valuable forests. The Coniferous Forest zone, however, which lies to the south and stretches right across the Region is a very important source of forest products, pulpwood being the most significant. Black spruce, white spruce, jack pine, poplar and white birch are the species most commonly found. Farther south, in the Great Lakes Mixed Forest zone, yellow birch, balsam fir, white spruce, white pine, jack pine, hemlock, maple and poplar predominate.

VOLUME OF PRIMARY GROWING STOCKS, NORTHEASTERN ONTARIO REGION

	Crown		Patented Exploitable
	Exploitable	Potentially Exploitable (Thousands of Cubic Feet)	
Softwood Species			
White Pine.....	2,299,716	—	126,141
Red Pine.....	663,927	—	29,323
Jack Pine.....	5,564,056	295,678	426,469
White Spruce.....	3,671,206	281,730	329,642
Black Spruce.....	13,495,781	3,144,049	1,588,592
Balsam Fir.....	3,360,807	365,016	411,821
Hemlock.....	667,098	—	80,302
Cedar.....	1,638,487	18,901	183,662
Total.....	31,361,078	4,105,374	3,175,952
Hardwood Species			
Hard Maple.....	3,214,253	—	325,771
Yellow Birch.....	2,876,372	—	286,806
Beech.....	100,783	—	3,856
White Elm.....	34,452	—	6,251
White Birch.....	7,274,695	228,232	685,623
Poplar.....	10,366,418	559,092	1,528,405
Total.....	23,866,973	787,324	2,836,712
Total.....	55,228,051	4,892,698	6,012,664

Productive forest land is that which bears, or is capable of bearing, timber of a commercial character and not permanently withdrawn from this use. Exploitable forest is that which is economically accessible under present technology and cost relationships.

AREA OF FOREST LAND, NORTHEASTERN ONTARIO REGION

	Productive Land (acres)	Total Land
Crown Owned.....	39,059,184	62,671,048
Exploitable.....	34,896,871	43,837,640
Potentially Exploitable.....	4,162,313	18,833,408
Patented.....	3,793,927	5,162,587
Total.....	42,853,111	67,833,635

The patented portion of productive forest lands, some 3.8 million acres, falls into two main tenure classes. The first is the small holding, forest land owned by an individual settler or farmer. Since agriculture in this part of the Province tends to be practised in ribbon-like strips along main highways or in relatively small pockets in what is essentially unbroken forest, the contribution of such holdings to the total economy of the Region is not great. To the individual, however, such a holding can provide important supplementary cash income through sales of forest products to local processors. The second class of ownership is the large holding, frequently measured by townships, such as those granted to builders of railways. Some of these grants have been retained, wholly or in part, by the original grantees while others have been acquired by land-holding or wood-processing companies. Such lands are of great importance to the total economy because they are the main source of raw materials for certain local processors and the main source of wood for export in an unmanufactured state. The Government requires that wood cut on Crown lands be processed in Canada.

Ownership of the remaining productive forest land—over 90 per cent of the total—has been retained in the Crown, with responsibility for management and administration vested in the Minister of Lands and Forests. Since all forest resources are renewable, the Department's timber policy is one of sustained yield, which implies provision of adequate protection, a rate of utilization that is in balance with the productive capacity of the area and measures to ensure regeneration of desirable species. The right to cut specified timber is conferred by licence and as of March 31, 1964, 236 licences were issued in Northeastern Ontario. Terms and conditions of a licence are defined by the Crown Timber Act and the Regulations under it, but in general they have a term of from 1 to 21 years with provisions for renewal. They require the payment of ground rent and fire protection charges and may require the licensee to prepare management and operating plans. When approved by the Minister, such plans form the basic framework of resource use.

THE LOGGING INDUSTRY

Logging is the first stage in converting a standing tree to a usable commodity. It may be carried on by almost any size of operator, from the small independent to the large fully integrated concern.

NORTHEASTERN ONTARIO REGION

In common with all of Eastern Canada, logging practices in Northeastern Ontario are going through a period of transition. Although the changes are manifold, they may best be summed up by one word, mechanization. Associated with this development of specialized harvesting and transportation equipment is a trend away from seasonal operations, dependent on farm and construction workers, toward the development of a permanent, specialized woods labour force. There has, thus, been a steady decline over recent years in the number of persons employed. Increased productivity, higher wages per worker and more stable employment have, however, also resulted.



Courtesy — Ontario Department of Tourism and Information.

Poplar logs being loaded near Kirkland Lake

Most forest products become the raw materials of other industrial operations. Some, however, such as poles, piling and certain mining timbers are used in the round i.e. without further processing. Regional statistics are incomplete, but an indication of the scale of operations may be obtained from preliminary 1963 figures. These show that the total payroll for operations in the woods is about \$26 million and that the value of all production is about \$71 million.

THE SAWMILLING INDUSTRY

The conversion of roundwood to sawn commodities has the longest history of all primary forest-based industries. While many important improvements in equipment have been made, the basic concepts of the process have changed very little through the years. The introduction and general acceptance of substitute building materials, however, has had an impact on the way in which the industry has developed in recent years. The relative scarcity of good hardwood for lumber purposes has also had an effect. It should not be surprising that the industry appears to have reached a plateau in growth and even exhibits some signs of decline, both in terms of absolute production and in relation to other primary processes.

**PRINCIPAL STATISTICS OF THE SAWMILLING INDUSTRY,
NORTHEASTERN ONTARIO REGION, 1952 AND 1957 TO 1963**

	<u>Establishments</u> <u>No.</u>	<u>Employees</u> <u>No.</u>	<u>Salaries and Wages</u> <u>(\$000's)</u>	<u>Selling Value of Factory Shipments</u> <u>(\$000's)</u>
1952.....	337	4,271	10,193	39,377
1957.....	190	2,689	8,088	31,510
1958.....	171	2,200	6,726	27,923
1959.....	159	2,225	6,669	29,443
1960.....	164	2,271	6,961	28,128
1961 ¹	107	2,414	7,585	28,522
1962 ¹	106	2,527	8,831	34,172
1963 ¹ (prel.).....	n.a.	n.a.	8,525	32,890

¹Establishments producing 100,000 board feet or more.

n.a. Not available.

A trend toward fewer mills with more integrated operations has become evident in recent years. The primary reasons for this are the relative increase in labour costs, the increased insistence on dimension-controlled products and the development of markets for wood residues. This last factor, which involves chipping slabs, edgings and trim, has given a tremendous economic boost to the sawmill industry since much of the material previously burned can now be sold to pulp mills. The cost of installing debarking and chipping equipment, however, can be borne only by sawmills of relatively large capacity. In 1963, an estimated 66,000 cords were consumed by pulp mills in the Region.

**THE PLYWOOD AND VENEER INDUSTRY
AND THE PARTICLE BOARD INDUSTRY**

The plywood and veneer industry is the newest of the three major primary forest-based industries. In 1962, there were seven establishments in Northeastern Ontario with shipments valued at \$8.5 million. Nearly 800 people were employed and earned salaries and wages totalling \$2.8 million.

A distinctive characteristic of this group is the product separation that exists on a geographical basis. Firms located in the southern portion of the Region—at

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Courtesy — William Milne and Sons, Limited.

Sawmill operation, William Milne and Sons, Limited, north of Timagami

Sault Ste. Marie, Thessalon, Mattawa and Kiosk—are primarily producers of furniture grades of veneer from yellow birch and hard maple, while mills located in the northern portion—Chapleau, Hearst, Cochrane and Kirkland Lake—are primarily producers of construction grades of plywood from poplar and white birch. Poplar species provide the bulk of raw material for particle board, which tends to be a complementary product to plywood in the sense that it is most commonly used as core stock although it may compete with plywood in other uses. Particle board mills are located in Kirkland Lake, New Liskeard and Sturgeon Falls.

One of the hazards of this industry is the constant danger of fire. Both in 1964 and 1965, two mills were razed. One was back in production early in 1965 and the others are currently rebuilding.

THE PULP AND PAPER INDUSTRY

The pulp and paper industry was originally attracted to Northeastern Ontario not only by the high quality spruce pulpwood, but by the availability of water both for industrial purposes and for the generation of electricity. The eight establishments now operating in the Region shipped products valued at nearly \$138 million in 1964. This was a record high. Shipments in 1963 were lower than usual, largely because of newspaper strikes in New York City and Cleveland.

**PRINCIPAL STATISTICS OF THE PULP AND PAPER INDUSTRY,
NORTHEASTERN ONTARIO REGION, 1952 AND 1957 TO 1964**

	<u>Establishments</u> No.	<u>Employees</u> No.	<u>Salaries and Wages</u> (\$000's)	<u>Selling Value of Factory Shipments</u> (\$000's)
1952.....	7	5,206	20,476	100,352
1957.....	8	5,291	24,746	121,682
1958.....	8	5,129	24,558	116,941
1959.....	8	5,175	25,227	118,819
1960.....	8	5,060	26,485	123,387
1961.....	8	4,889	26,542	123,880
1962.....	8	5,096	28,365	131,074
1963 (prel.).....	8	5,157	28,849	127,159
1964 (prel.).....	8	5,175	30,784	139,600

The largest producer in the Region is the Abitibi Paper Company Limited, which operates mills at Sault Ste. Marie and Iroquois Falls (principally newsprint), Sturgeon Falls (principally corrugating board and hardboard), and at Smooth Rock Falls where, in 1966, a bleached kraft pulp mill was put into production. Other firms in the Region are: The Canadian Johns-Manville Company Limited, North Bay (producing building materials); The K.V.P. Company Limited, Espanola (producing a large variety of paper products including groundwood, wrapping, specialty and building); and Kimberly-Clark Canada Limited and Spruce Falls Power and Paper Company Limited, both of Kapuskasing (the former specializing in tissue and wadding products and the latter in newsprint).



Courtesy — Ontario Department of Tourism and Information.

View of K.V.P. Company Limited paper mill, Espanola

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Noteworthy changes are taking place in the pulp and paper industry. The K.V.P. Company Limited has embarked on a \$17.6 million expansion that will double output. Completion is scheduled for late 1966—early 1967. The change at Smooth Rock Falls from sulphite to sulphate pulp is expected to result in several operating economies and increased production. Spruce Falls Power and Paper Company in 1964 introduced magnefite pulping which, in addition to many operating benefits, has the advantage of minimizing waste disposal since almost all chemicals can be reclaimed for further use. A new \$20 million newsprint machine is currently being installed which will increase capacity by 50,000 net tons per year. In the spring of 1966, a \$3 million expansion and renovation program was announced by the Abitibi Paper Company for its Sturgeon Falls plant. Production capacity of corrugated medium paper is to be increased by 30 per cent to 220 tons. The two-year program is scheduled to start this fall.

SECONDARY WOOD-USING INDUSTRIES

This section of industry is composed mainly of sash, door and planing mills although furniture and other producers of consumer wood products are also included. The importance of this industry to the Region is declining. A tendency to concentrate production in large plants outside the Region and to use a variety of materials in construction has become evident.

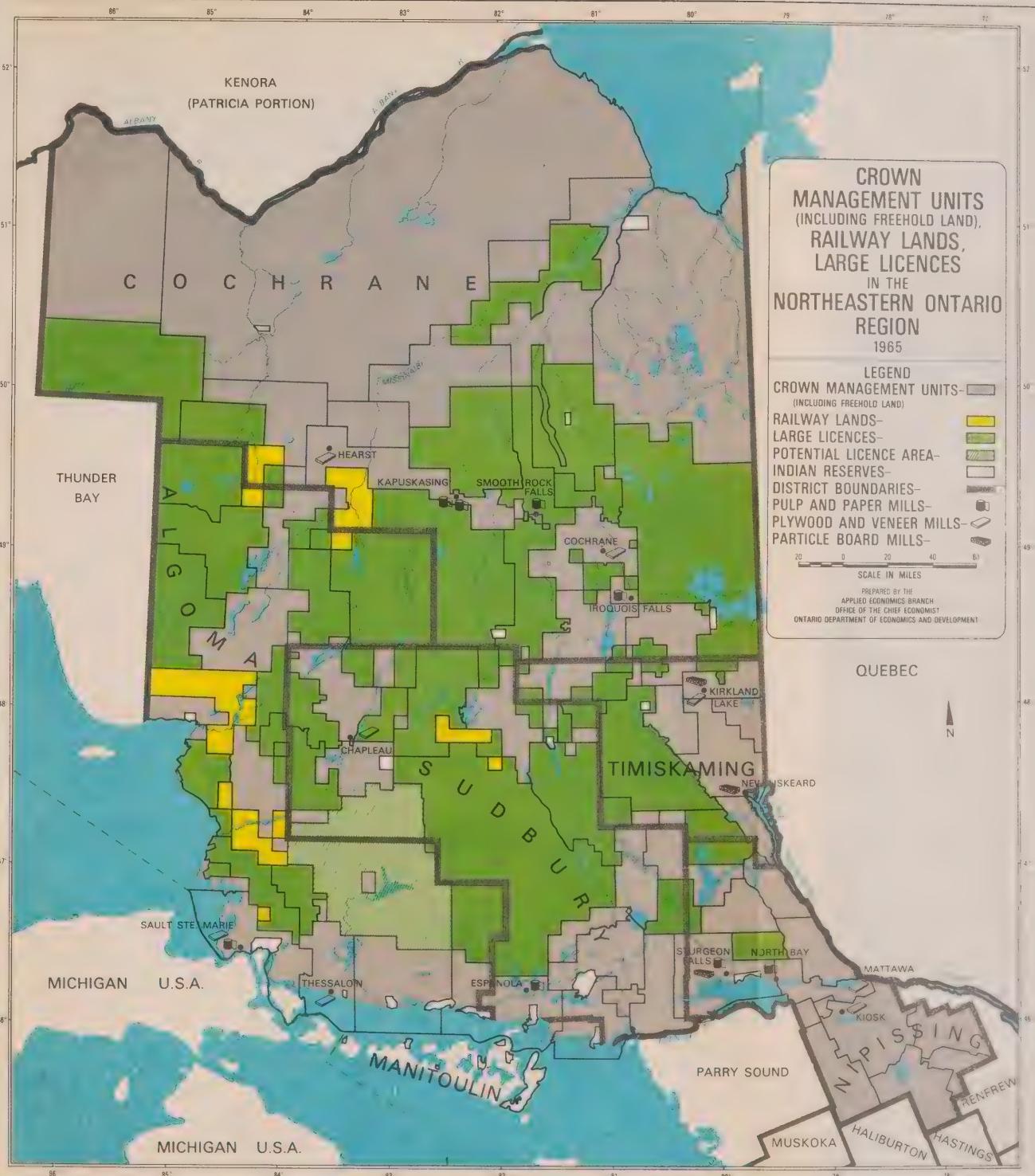
PRINCIPAL STATISTICS OF SASH, DOOR AND PLANING MILLS, NORTHEASTERN ONTARIO REGION, 1952 AND 1957 TO 1962

	Establishments No.	Employees No.	Salaries and Wages (\$000's)	Selling Value of Factory Shipments (\$000's)
1952.....	54	1,169	2,601	11,391
1957.....	27	686	2,003	7,517
1958.....	25	496	1,564	5,495
1959.....	28	465	1,616	6,088
1960.....	27	410	1,352	5,202
1961 ¹	19	315	1,023	4,613
1962 ¹	15	184	689	3,119

¹Duplication of returns of certain small operations eliminated

THE IMPACT ON THE ECONOMY

The values shown in the various tables above give some indication of the outstanding importance of forest-based industries to the economic well-being not only of Northeastern Ontario but the Province as a whole. The fact that the industry is fairly evenly distributed throughout the Region is an additional asset as is the fact that the roads necessary to bring out the timber give ever-increasing access to new resources of all kinds. It might be added that although the forest-based industries now make a considerable contribution to the Regional economy, the allowable cut of certain species is still much larger than the actual cut. According to the Department of Lands and Forests, timber growth in the Region could



support three additional pulp mills while permitting the existing mills to consume two and one-half times their present volume of wood. The services of the Provincial Government, to help in the study of resources and locations, are available to persons able to establish new processing plants.

Of considerable importance to the harvesting and wood manufacturing processes are the forest protection and timber management functions of the Department of Lands and Forests. To help ensure a future supply of timber, for example, a variety of silvicultural operations are carried out. Operations for the 1964-65 fiscal year are typical: more than 15 million trees were planted; more than 29,000 acres of immature existing stands were improved by such measures as pruning, thinning, and spraying; and almost 500 acres were scarified and sown with seed of commercial tree species. Other Departmental activities include fire prevention and suppression, control of cutting, scaling of forest products, fish and game management and law enforcement, land disposition, and parks operation and maintenance.

Agriculture

The Northeastern Ontario Region, with its nearly 67 million acres of land, accounts for almost one-third of the Province's total land area. It contains 6.8 per cent of the Province's farm area, 4.0 per cent of the improved land, 4.2 per cent of the land under crop and 3.7 per cent of the improved pasture. Because of its shorter growing season, yields tend to be somewhat below those in Southern Ontario. In 1964, the value of all field crops grown in the Region (\$13.3 million) accounted for three per cent, the number of horses (2,950) and cattle (120,190) on farms for four per cent and the number of sheep (26,050) for eight per cent of the respective Provincial totals.

Much of the Region's agricultural activity is carried on in the lands of the Clay Belt and the Little Clay Belt, located in Cochrane and Timiskaming districts, respectively, in the frequent pockets of loam and clay soils found in Manitoulin District and in the areas around Sudbury, Sault Ste. Marie and North Bay. The southern section of the Region with its somewhat milder climate and excellent loams and clays is particularly well-suited to the growing of grasses and clovers, thus encouraging cattle raising and dairy farming. The lighter soil formations produce excellent yields of high-grade potatoes and good crops of barley. North of Highway 11 in the District of Cochrane, unfavourable climate, a limited area of tillable soil and lack of access roads have severely limited agricultural endeavour.

In the three decades between 1931 and 1961, agriculture in Northeastern Ontario changed considerably. In 1931 there were 11,911 farms in the Region; in 1951 there were 9,113; and by 1961 the number had declined to 5,058, an overall decrease of 45 per cent. Acreage also declined, from 1,991,937 in 1931 to 1,703,758 in 1951 and 1,261,158 in 1961. This declining trend has been intensified by the rapid development of the mining and forest-based industries in the Region. The attractive employment opportunities and high wages offered by these industries have not only attracted many farm workers but have also prompted some farm owners to either abandon their farms for more profitable industrial occupations, or to farm on a part-time basis. As a result, the farm population which numbered 57,186 persons (including 24,295 farm workers) in 1930, had decreased to 49,544 (including 9,254 farm workers) in 1951, and to 28,762 (including 5,269 farm workers) in 1961.

The resultant increase in the cost of farm labour led to the withdrawal of some marginal lands from production, the concentration of labour force in the most productive areas and the consolidation of small farm units into larger holdings. Between 1951 and 1961, the average size of farms in the Region rose from 187 acres to 249 acres. The number of farms containing 400 acres and over rose from 638 to 791, or by 24 per cent while the number of 1,600-acre farms rose from 6 to 11.

The economic advantage of using more fertilizer and more machine power has increased the disparity between level, stone-free, drained land and the rougher areas. As a result, good farms are producing more than ever and less productive

land is reverting to part-time operation or is going out of cultivation. Operating costs of a modern large farm, including feed, fertilizer, equipment, machinery and fuel are such that they require a much greater volume of production for the investment involved, i.e. a more economical farm unit.

In 1961, 2,645 farms or more than 52 per cent of the Region's total were classified as commercial. Commercial farms, as defined in the 1961 Census, include all farms reporting sales of agricultural products for a 12-month period of \$1,200 or more (excluding institutional-type farms). Timiskaming District had the largest number of such farms (577) while Sudbury had the smallest (349). The proportion of commercial farms to total farms stood at 68 per cent in the Manitoulin District, 57 in Algoma and in Nipissing, 54 in Timiskaming, 42 in Sudbury and 40 in Cochrane. The number of farms selling their products at \$10,000 and over totalled 176; in the \$5,000 to \$9,999 category, there were 523, while the largest single group, 1,077 farms, fell in the \$1,200 to \$2,499 category of value of goods sold.

The majority of small-scale farms, defined by the 1961 Census as farms whose value of products sold ranged between \$250 and \$1,199 a year, were operating in Timiskaming, Cochrane and Sudbury with 290, 271 and 266, respectively. Similarly, over two-thirds of the Region's residential farms, whose value of products sold was less than \$250 a year, were located in these three districts.

The most important agricultural activity carried on by the commercial farms was dairy farming and cattle raising. In 1961, 2,099 or over 79 per cent of all commercial farms were engaged in this form of enterprise. Mixed farming was pursued on 189 farms.

COMMERCIAL FARMS CLASSIFIED BY TYPE OF FARM, NORTHEASTERN ONTARIO REGION, 1961

	A—Clay Belt		B—Nickel Range		C—Sault		Northeastern Ontario Region	
	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
Dairy.....	762	54.6	230	27.2	156	38.6	1,148	43.4
Livestock (excluding dairy farms)	317	22.7	458	54.1	176	43.6	951	36.0
Mixed Farming.....	115	8.3	43	5.1	31	7.7	189	7.1
Poultry.....	66	4.7	45	5.3	25	6.2	136	5.1
Field Crops.....	49	3.5	34	4.0	6	1.5	89	3.4
Forestry.....	63	4.5	21	2.5	5	1.2	89	3.4
Other*.....	23	1.7	15	1.8	5	1.2	43	1.6
Total.....	1,395	100.0	846	100.0	404	100.0	2,645	100.0

*Includes small grains, fruits and vegetables and miscellaneous specialty.

LIVESTOCK AND DAIRY FARMING

Cattle raising, especially for beef purposes, has assumed increasing importance in Northeastern Ontario. The total number of cattle in the Region increased from

NORTHEASTERN ONTARIO REGION

97,215 in 1951 to 120,190 in 1964 or by 24 per cent. The Clay Belt Sub-region accounted for nearly 52 per cent of the Region's total. Timiskaming District had the largest number of cattle, closely followed by Manitoulin District. At the end of 1964, the former had 27,020 head of cattle or 34 per cent above its 1951 level, while the latter had 26,270 head of cattle, representing a 36 per cent increase over the same period.

In 1951, about 50 per cent of all cattle in the Region were raised for dairy purposes; by 1964, this proportion had decreased to 35 per cent. The actual number of milk cattle also declined over the period from 48,680 head to 41,800 or by about 14 per cent. Nevertheless, dairying is still of major importance in certain sectors of the Region and more than 43 per cent of commercial farms are engaged in this line of endeavour. The largest number of dairy farms (309) was in Timiskaming and the smallest (41) in Manitoulin.

The production of creamery butter in Northeastern Ontario is about three million pounds a year. The District of Timiskaming, with some 1.3 million pounds, is by far the largest producer. Nipissing, with 666,000 pounds is next. More than 111 million pounds of milk or about five per cent of total milk purchases in the Province were bought from farmers by the Licensed Commercial Dairies in the Northeastern Ontario Region. The largest purchases, amounting to more than 36 million pounds, were made in the Sudbury District, accounting for over one third of the Region's total. The Region's output of cheddar cheese has been steadily increasing from about 193,000 pounds in 1957 to 474,000 pounds in 1964.

The raising of cattle, particularly beef cattle, is being encouraged through the establishment of community pastures and a land consolidation plan under the Agricultural Rehabilitation and Development Act. The purpose of community pastures is to enable farmers to increase their livestock carrying capacity by providing rented, supervised pasture at low cost. During 1964, 640 acres of land were acquired in Beauchamp Township, District of Timiskaming. A further 320 acres were acquired in 1965 to meet the growing demand. One performance bull has been acquired for use in this pasture. During the 1965 season, 100 head were grazed on the pasture at a charge of \$13 per head for yearlings and \$17 for cows. A 2,400-acre community pasture has also been established in Manitoulin District. During 1965, 230 head of cattle were pastured at a charge of \$10 per head for yearlings and \$18 for a cow and calf.

A land consolidation program for beef livestock ranching units is also under way in Northeastern Ontario. In the past, extensive areas of high quality pasture and hay lands were opened up for agricultural settlement. Much of this land has now been abandoned as general family farms. The land consolidation program provides for the acquisition of several large blocks of land, approximately 1,500 acres each, that would be suitable for beef livestock ranching. It is proposed that these be leased by the Ontario ARDA Directorate under certain conditions of management and maintenance to livestock farmers on a long-term lease.



Courtesy -- Ontario Department of Agriculture.

Beef cattle grazing near New Liskeard

Steps are also being taken to aid the economy of the District of Manitoulin which has, in recent years, suffered a number of setbacks. The decline of uranium mining at Elliot Lake and the resultant drain of population meant reduced sales of milk and dairy products. The ending of logging operations for the Ontario Paper Co. in 1962 further reduced the market for Manitoulin agricultural products. In addition, a co-operative turkey eviscerating plant, suffering from management difficulties, lost the confidence of growers and turkey production declined markedly.

The District was declared a Rural Development Area under the terms of the Federal-Provincial ARDA Agreement. A rural development officer has been appointed to co-ordinate the facilities of several departments of government, both Federal and Provincial, in developing programs that will improve the economy of the area. Further, the Federal and Provincial governments have agreed to share the cost of a \$650,000 development program. Approximately \$184,000 of this amount will be spent on the turkey industry where improvements are expected to raise production to 70,000 birds per year and to provide the Gore Bay plant with better management and processing facilities.

The raising of pigs, sheep and poultry has been marked by a steady decline over the 1951 to 1964 period. In 1964, the number of pigs (16,650) in the Region was 46 per cent lower than the corresponding figure in 1951. The number of hens and chickens decreased by 48 per cent, and the number of sheep by 14 per cent.

NORTHEASTERN ONTARIO REGION

FIELD CROPS

The farm value of all field crops in the Region, estimated at over \$16.5 million in 1951 fell to \$13.3 million in 1964. The 1964 value, however, was five per cent above the level reached in 1963. Acreage under field crops in 1964, 340,850, was 18 per cent lower than in 1951 but fractionally higher than in 1963. Hay—including alfalfa, alsike and clovers—is the most important of the Region's field crops. Valued at over \$7.9 million in 1964 it accounted for about 60 per cent of the value and 70 per cent of the acreage of all the field crops in the Region. Both volume and value were higher in 1964 than in the previous year but lower than in 1951. More than one-third of the hay is produced in Timiskaming, about 129,000 tons, followed by Manitoulin and Cochrane. Oats, the principal grain in the Region, was grown on approximately 80,000 acres and was valued at over \$2.7 million in 1964, down 15 per cent from 1963. Nearly one-half the oats was grown in the Districts of Nipissing and Timiskaming. The potato crop, grown on 3,100 acres was valued at \$1.9 million in 1964, a record high. The Districts of Sudbury and Cochrane produced 35 per cent and 26 per cent, respectively, of the Region's 884,600 bushel crop. These three major crops, with an aggregate value of \$12.4 million accounted for nearly 94 per cent of all field crops grown in the Region.

Crop yield per acre and farm value of crops per acre have fluctuated considerably both in the Region and the Province as a whole. In general, the position of the Region when compared with the Province tends to be unfavourable.

VOLUME AND VALUE, SELECTED CROPS, NORTHEASTERN
ONTARIO REGION, 1951 AND 1961 TO 1964

Selected Crops	Ontario			Northeastern Ontario Region		
	bushels/acre	Farm Value \$/acre	bushels/acre	Per Cent of Ontario	Farm Value \$/acre	Per Cent of Ontario
Hay.....	1951	2.16*	32.40	1.62*	75	32.80
	1961	2.34*	31.40	1.78*	76	27.76
	1962	1.96*	31.03	1.50*	77	26.93
	1963	2.19*	38.76	1.71*	78	32.20
	1964	2.04*	42.43	1.52*	75	33.02
Oats.....	1951	47.00	41.83	43.11	92	38.60
	1961	50.60	40.99	42.37	84	36.30
	1962	54.30	42.35	43.56	80	38.18
	1963	52.20	38.63	49.33	95	38.24
	1964	53.20	39.37	43.36	82	33.14
Potatoes.....	1951	176.00	387.20	188.25	107	307.96
	1961	318.00	298.92	252.65	80	346.97
	1962	320.00	364.80	257.97	81	322.97
	1963	320.00	384.00	277.26	87	341.23
	1964	330.00	534.60	285.35	86	612.68

*tons per acre.

Despite the volume yield per acre being some 13 per cent lower than the Provincial average, potato growing in the Region appears to be a most profitable agricultural venture—dollar yield per acre in 1964 being fifteen per cent above the Provincial average. This is due to higher prices received for potatoes within the Region. When compared with the potato yield of about 396 bushels per acre in Simcoe and 388 bushels per acre in Prescott counties, the yield per acre in the Region is about 28 per cent lower. The higher prices for potatoes which compensate the farmer for his lower yield per acre are, at the same time, an open invitation to competition from Western and Central Ontario producers and even from producers in New Brunswick and Prince Edward Island. This competition from outside plus the difficulties experienced in harvesting because of the characteristic wet autumn season are largely responsible for the decrease in potato production in the Region.

Almost 6,000 acres were under potatoes in the Region in 1951. Over a ten-year period this acreage decreased by nearly one half and has remained stationary ever since. Suitable soil is available, however, and the production of potatoes could probably be increased, at least to the level of local consumption, provided modern production methods were applied. The resulting increase in yield per acre, might permit a decrease in price for the locally grown product and reduce the advantage of outside producers.

The farm value of one ton of hay has decreased from \$20 in 1951 to about \$16 in 1961. When compared with the Provincial average value of hay of some \$15 and \$13 per ton in 1951 and 1961, respectively, it appeared more profitable to "finish the cattle" in Southern Ontario. This practice, however, resulted in a decreased demand for hay in the Region. In 1964, the Region's value of hay of \$22 per ton stood about \$1 above the Provincial average. Another limiting factor affecting the extent of hay growing has been the technological advance in the production of quality hay. Seeded hay, harvested in the most suitable period of its growth and mechanically dried, has a considerably higher nutrient value because the maximum of its protein value is retained. Thus, quality has to some extent replaced the quantity previously consumed.

There appears to be little prospect of hay production shifting from Southern Ontario to Northeastern Ontario, because the disparity in prices would not cover the costs of transportation. It is even more unlikely that Northeastern Ontario hay could successfully compete for the Southern Ontario market. Since excellent potentialities for growing hay exist in the Region, and no economically feasible market for hay can be found outside the area, an increase in demand through expanded cattle raising, especially for beef purposes seems to be indicated. The feasibility of raising beef cattle in Northeastern Ontario Region, on a large scale, is being examined by agricultural authorities. The Provincial Demonstration Farm at New Liskeard, as well as the Dominion Experimental Farm at Kapuskasing are actively participating in this research.

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Although the volume of oats produced in the Region has not fluctuated considerably the acreage decreased from 86,027 acres in 1951 to 80,400 acres in 1964. It would appear desirable to fully utilize the oats-growing area and to raise the yield per acre under cultivation by application of modern methods of farming. The increased crop would help to finish the beef cattle in the Region and possibly lead to the establishment of slaughter houses and a meat-packing industry in the area.

Increased utilization of mechanized agricultural techniques is evidenced by the presence of 4,075 tractors, 2,320 grain binders, 1,410 pick-up hay balers, 1,112 milking machines and other technical devices present in the Region. Electric power is available on 4,742 farms—94 per cent of all farms in the area.

The outstanding trend in agriculture today is toward mechanization, expanded use of fertilizers and adoption of modern agricultural techniques. This trend is also evident in the Northeastern Ontario Region. The value of machinery and equipment utilized by the Region's farmers rose by over 18 per cent in the 1951-1961 period, and in the latter year amounted to over \$20,000,000. The mechanical devices assist the farmer in his field operations and with his livestock chores. The tractors, milking machines, gutter cleaners and feed carts as well as silo unloaders are entering the Region to replace the declining labour force. The new agro-technique, even under adverse climatic conditions, is producing good crops of tomatoes, turnips and other vegetables, while the quality of potatoes grown in the Region can satisfy the choicest taste. There appears to be, however, ample room for expansion.

Fur Trapping and Commercial Fishing

FUR TRAPPING

Undoubtedly one of the earliest economic activities in Northeastern Ontario was the trapping of wild animals for their furs. It was the wealth available from the fur trade which first attracted European adventurers into the Region and although minerals and timber have since replaced fur-bearing animals as the primary economic natural resources, trapping still plays an important role in the livelihood of many people in the Region. It provides employment in the off-season for people otherwise engaged in guiding, tourist out-fitting and commercial fishing —activities of particular importance to Indians in the Region.

During the 1963-64 season, wild pelts valued in excess of \$1 million were harvested in the Region. This is approximately one-quarter of total wild fur production in the Province. Beaver is by far the most important species, followed by muskrat, mink, otter and marten. Catches of fisher, lynx, raccoon and fox are also significant.

About one-quarter of the Provincial catch is marketed by the Ontario Trappers Association (O.T.A.). The Association, which has its headquarters in North Bay, holds several fur auctions each season. In 1963-64 it registered gross sales of over \$1.1 million. In 1964-65, however, sales declined to about \$852,000. Furs are sent to these auctions from all parts of the Province and buyers may come from Montreal, Quebec, Toronto, Ottawa, Winnipeg, New York and London, England as well as from Cochrane, Massey, Sudbury, Timmins and Parry Sound. The bulk of the wild fur catch is still sold directly by the trapper to the Hudson's Bay Company, other stores, or travelling collectors of the fur industry.

Price of fur varies not only between species but within species—governed by size, colour and seasonal condition or primeness. For example, extremely large beaver blankets, prime and of good colour and in good condition will bring as high as \$40 although the average price is only around \$13. Small beaver skins bring \$3 or less. In contrast, the small dark pelts of female fisher can bring well over sixty dollars each in matched pairs while the large grizzled pelts of old males often bring less than \$5. The average price for fisher has been around \$13. Over the years, the prices of various species have fluctuated widely with the whims of fashion. Beaver, which is the main dollar earner for Ontario trappers is just recovering from a period of extremely low prices in the late fifties. Fox, which was sought after several decades ago, became almost valueless in the immediate post-war period, but has recently experienced good demand through its use in trimming.

One area in which the Ontario Trappers Association and the Department of Lands and Forests has made a major contribution, through its campaigns and demonstrations, is the proper preparation and handling of furs. With so many natural and uncontrollable causes of variation in fur prices, it is important to at least eliminate pelt depreciation through careless handling.

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Only 13 of the 505 fur farms licensed in Ontario during 1963 were in Northeastern Ontario—one each in Algoma and Cochrane, two in Sudbury, four in Nipissing and five in Manitoulin. Various mink mutations are the principal fur species farmed in Northeastern Ontario. The value of ranch-raised pelts in Ontario is almost double the value of the wild catch; in Northeastern Ontario, however, it is the wild catch that is of major significance.

C O M M E R C I A L F I S H I N G

Commercial fishing is carried out in Georgian Bay, the north channel of Lake Huron, the eastern end of Lake Superior and several of the larger inland lakes and rivers. The major species taken are whitefish, yellow pickerel, pike, perch, herring, lake trout and chub. Sturgeon are taken in the Great Lakes as well as in some of the larger northern rivers. In the north, the sturgeon fishery supplements income for Indians. In 1964, the total commercial catch of fish for the Northeastern Ontario Economic Region was 993,800 pounds with a gross value of \$284,734.

Commercial fishing in the Region has gradually declined in recent years, bringing hardship to a number of fishing communities. Following the great production of whitefish in Georgian Bay in the period 1950 to 1954, this species has never had such highly successful year-classes of fish reach maturity. The biological reasons are not fully understood, but environmental factors, perhaps related to weather, are probably significant. Lake trout, and other species to a lesser degree, suffered severely from attack by sea lamprey. In the early 1960's, chemical methods of controlling this animal began to offer hope that the valuable lake trout could be restored in the upper Great Lakes. The control program, under the direction of the Great Lakes Fishery Commission (established by International Convention in 1953), will this year begin to extend the program into the waters of northwestern Lake Huron.

Energy

ELECTRICITY

Total electrical generating capacity in Northeastern Ontario is now close to 1.5 million kilowatts, with an additional 125,400 kilowatts anticipated in 1966. Nearly one million kilowatts of present capacity are owned and operated by The Hydro-Electric Power Commission of Ontario, the remainder by private companies. The largest of these latter is Great Lakes Power Corporation Limited which supplies power to a large area lying immediately east of Lake Superior, including the city of Sault Ste. Marie. Other companies, such as Abitibi Paper Company Limited, Spruce Falls Power and Paper Company, Huronian Company Limited, Algoma Steel Corporation, International Nickel Company of Canada Limited and Kalamazoo Vegetable Parchment Company Limited also produce power, but primarily for their own use. In some instances it is also sold to residents of nearby communities. Most of the generating capacity of the Region is provided by hydro-electric generating stations. Thermal stations are small, the largest having a capacity of 26,000 kilowatts, and are operated by large industries to help supply their own power needs.

Among the most important developments in the recent history of electricity is the discovery of how to transmit large blocks of power economically over long distances by means of extra-high-voltage transmission lines. With the reduction in power losses during transmission and in the number of lines and consequently in the amount of land needed, it has, in some cases, become more economical to bring power from the far north to load centres in the south than to build thermal stations in the cities needing the power. A 500,000-volt line, capable of transmitting as much power as four 230,000-volt circuits, for example, requires little more right of way than one lower voltage circuit. Hydro Québec is currently constructing a 735,000-volt extra-high-voltage transmission system to bring electricity from its huge Manicouagan project to Quebec City and Montreal. The first of three such extra-high-voltage lines was opened in November 1965. At present this 365-mile transmission line carries only 500,000 kilowatts of energy but by 1972 the full 5.5 million kilowatts to be produced by seven generating stations will be moved into the provincial system. No other country has attempted an alternating current transmission system at such a high voltage. The highest so far is Russia's 525,000-volt system. In British Columbia, power from the Peace River project is to be transmitted by Extra-High-Voltage—574 miles at 500,000 volts.

In Ontario, Extra-High-Voltage has been developed by Ontario Hydro to bring power from the James Bay watershed to the industrialized south. By 1966, this 500,000-volt line will deliver 551,000 kilowatts from four generating stations on the Abitibi and Mattagami rivers to load centres as far south as Toronto, a distance of 440 miles. Total cost of the program, including the construction of the four generating stations, is estimated at some \$200 million.

Ontario Hydro embarked on this hydro-electric development complex in 1958. Comprehensive studies carried out the previous year had indicated that with the

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Courtesy — The Hydro-Electric Power Commission of Ontario.

Section of Ontario Hydro's extra-high-voltage transmission line, near Sudbury

development of all major hydro-electric resources in Southern Ontario, development of sites in the far north would be economical. It was determined that approximately 2,000 megawatts of peak capacity might ultimately be developed there economically for transmission to the South at extra-high voltage. Much of the available capacity was located on the Abitibi, Mattagami and Missinaibi rivers, and on the Moose River into which they flow.

This Moose River watershed drains some 35,000 square miles into James Bay at Moosonee. Deep deposits of rock, sand and gravel overlie the pre-Cambrian rock in the southern part of the watershed and sedimentary rock in the north. The entire area forms a rolling plain that slopes gently towards James Bay. The relatively flat surface is generally poorly drained and has extensive areas of muskeg.

Long before the construction of an extra-high-voltage transmission system could begin, extensive research, design and testing were carried out, both in the field (an experimental line was built at Coldwater) and in the research laboratory. Actual construction of the line also posed special problems, caused largely by terrain made up of rock and muskeg and a severe climate. A year before the first towers were put into position, experiments were begun and many innovations and new methods were developed. A V-shaped aluminum tower, one-third the weight of a comparable steel structure was designed, also a wide-tracked muskeg vehicle to carry six-ton cable reels over the rugged countryside. Later, a new Y-shaped tower, lighter than the V-shape, was used. When it became evident that many towers could not be transported to their sites in the usual way, methods were devised to bring them in by helicopter.

Two units of the Otter Rapids Generating Station on the Abitibi River, which became part of the development program in 1958, were placed in service in 1961. The second phase of construction was completed in 1963 when the third and fourth units went into operation, bringing total capacity to 174,800 kilowatts. Two units went into operation at Little Long Generating Station the same year, two at Harmon in 1965 and two units went into service at Kipling in July 1966. These three plants on the Mattagami River have a total capacity of 376,200 kilowatts. Including the completion of the extra-high-voltage transmission line, the initial phase of development of the potential of the Moose River system has now been implemented. Additional capacity for meeting short-term peaking requirements will probably be developed either by the addition of units at these four stations or by the construction of other hydro-electric stations. Economic studies are under way for the evaluation of these hydro-electric alternatives to thermal-electric generation. Three water diversion projects were undertaken in connection with the construction of the four new generating plants—two involving the Mattagami and one in connection with the Abitibi—to divert flood water and to increase power potential at downstream stations.

The crux of the whole development, however, is the transformer station at Pinard which, some 60 miles north of Cochrane, is the northern terminus of the



Courtesy — The Hydro-Electric Power Commission of Ontario.

Little Long Generating Station, 42 miles north of Kapuskasing

extra-high-voltage transmission line. From it, the four generating stations will be operated by remote control, and to it will come their entire power output. From here, this power will be transmitted 440 miles to the homes and industries of the South.

The first section of the extra-high-voltage line, linking the plants of the James Bay watershed to the Martindale Transformer Station at Sudbury, went into operation at 230,000 volts in October 1963. With the completion of a new \$5,000,000 transformer station at Hanmer, five miles north of Sudbury, early in 1966, power was raised to 500,000 volts on this first section. The second section, a 175-mile stretch between Sudbury and Barrie went into operation at 230,000 volts in June 1965. The balance of the line, to Kleinburg north of Toronto, will go into operation at 230,000 volts in the fall of 1966. The entire system will later be raised to 500,000 volts.

Northern communities will receive power from the new plants through a connection at Hanmer Transformer Station. This line will also be used to supplement the output of other Northern Ontario generating stations, ensuring security of electrical service for the North.

Maintenance and equipment checks of all stations in the James Bay watershed will be carried out by travelling crews based at the Abitibi Canyon Colony which was established in 1933 to accommodate operating personnel at the Abitibi Canyon Generating Station. The 208,100 kilowatts of power produced at this plant are carried over conventional lines to the mines, homes and industries of the Region. A new town plan prepared to provide for the influx of operators, engineers and technicians required to operate the James Bay watershed complex, is now complete and includes the construction of a new hospital with nurses' quarters, a new fire hall, new homes, etc.

By mid-1966, construction of a 45-mile secondary highway was completed between Smooth Rock Falls on Highway No. 11 and Fraserdale near Abitibi Canyon G. S. This road was built by the Ontario Department of Highways with Ontario Hydro sharing in the cost. Until its completion, the Colony's only land link to the rest of the Province was the Ontario Northland Railway. This highway connects with a 27-mile access road from the Colony to Little Long Generating Station.

Extensions and improvements in the production and distribution of power in the Region have been carried out in addition to the Extra-High-Voltage and James Bay watershed projects. During 1964, 29 miles of 115,000-volt transmission line were contracted to a new transformer station at Hearst. This has provided a significant improvement in service in this area, being the last phase of a program to increase capacity at Hearst in order to be in a position to pick up future loads to the west. Three new distributing stations were also built that year in order to serve rapidly increasing loads. There was a net addition of 794 customers served by rural facilities and 94.5 miles of rural distribution lines.

A number of new distribution stations were also built during 1965. These included Northshore Distribution Station, near Blind River, Chapleau Distribution Station, Matachewan Distribution Station, and Timmins Distribution Station. Consideration is being given to the construction of Abitibi Canyon Distribution Station, and Cooks Mills Distribution Station, near North Bay.

In September 1965, a 55-mile 115,000-volt transmission line was completed to Chapleau from a point near Wawa, to replace the existing diesel service. Arrangements for power supply have been made with Great Lakes Power Corporation. Site investigations are being carried out on the Mississagi River north of Thessalon and on the Montreal River southeast of Cobalt to determine their potential and the feasibility of developing them. This is part of an over-all plan to harness the Province's remaining economic hydro-electric resources in conjunction with expansion of coal-fired and nuclear-electric generating facilities.

A major program of transmission line construction in Northern Ontario was announced by Ontario Hydro in April 1966. When completed, the Hydro's East system which serves Southern and Northeastern Ontario will be linked with the West system in Northwestern Ontario. In addition, a physical link will have been

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established between electric power utilities from Saskatchewan to Quebec. The first stage of the project will be carried out in co-operation with Great Lakes Power Corporation which serves the Sault Ste. Marie area. The project calls for a 230,000-volt circuit to be built from the Sudbury area to the Sault. Sections of these facilities already exist. A second 230,000-volt line is scheduled for completion by 1969. The direct physical link between the two systems will be accomplished by building a 230,000-volt line from the Michipicoten area to Ontario Hydro's Rayner Generating Station near Thessalon. Steel tower erection is scheduled for the spring of 1967 on the Marathon-Michipicoten line and in early 1968 in the area between Blind River and the Rayner station. In later years, it is planned to extend transmission facilities, in stages, from Marathon to the Lakehead.

It was also announced by the Commission that a 50-mile, 115,000-volt transmission line would be built between Timmins and the proposed Canadian Johns-Manville Co. Ltd. asbestos development in Reeves Township. It is expected to be in service by the spring of 1967. A 15-mile, 25,000-volt line will then be built into Foleyet.

In 1965, Ontario Hydro sales of electrical energy in the Region reached 3,495.1 million kilowatt hours. This is double the sales of 1955 and more than four per cent higher than in 1964. Some 72 per cent or more than 2.5 billion kilowatt-hours went to power customers, 18 per cent to domestic, 8 per cent to commercial and the remaining two per cent to farm and street lighting customers.

Great Lakes Power Corporation Limited serves an area which stretches from Wawa in the north and Missanabie in the northeast, to Bruce Mines and St. Joseph's Island in the south. The industries and Public Utilities Commission of Sault Ste. Marie are also served.

At the end of 1965, Great Lakes Power had a total capacity of 192,000 kilowatts in nine plants. This includes a remotely controlled plant completed in 1965, Hogg Generating Station, on the Montreal River with a capacity of 15,000 kilowatts. The construction of two additional units at existing stations is now under consideration. The first is a 21,000 kilowatt station at Lower Falls on the Montreal River and the second, a 10,000 kilowatt station at High Falls on the Michipicoten River. These two units would increase the installed capacity of the company by about 16 per cent. Continued improvement of water storage facilities will help to meet heavy peak power demands. Great Lakes Power also has an inter-connection with Ontario Hydro at George W. Rayner Generating Station on the Mississagi River.

In 1965 the company delivered 1,120,899,521 kilowatt-hours of electrical energy—1,028,040,061 kilowatt-hours within its own system, up 11.1 per cent over 1964, and 92,859,460 kilowatt-hours of exchange energy to Ontario Hydro. Industrial customers account for about 70 per cent of the company's power sales, with Algoma Steel Corporation and Abitibi Paper Company being two of its major customers. The City of Sault Ste. Marie is supplied with power at wholesale for

distribution within the city and adjacent areas. Power is supplied to Ontario Hydro for distribution in the Chapleau area. The company also retails electrical energy in 26 communities and municipalities, including the surrounding rural areas.

All the generating equipment of the company is hydro-electric. Four stations are located on the Michipicoten River, four on the Montreal River and one at the St. Marys River rapids at Sault Ste. Marie. These are interconnected with about 310 miles of transmission lines. It is expected that with the continued expansion of industrial facilities and population in the Sault Ste. Marie area, there should be a corresponding increase in power demands. The company will continue to carry out studies related to development for future load increase and for improvements within its system.

NATURAL GAS

Natural gas first became available in Northeastern Ontario in October 1958, when the trans-continental gas transmission line was completed. While Trans-Canada Pipe Lines Limited transmits natural gas from Alberta through to the Montreal area, Northern and Central Gas Co. Ltd. (formerly Northern Ontario Natural Gas Company Limited) has constructed and operates distribution facilities in both Northwestern and Northeastern Ontario and as far south as Orillia, about 80 miles north of Toronto. By the end of 1964, 619 miles of pipe had been laid by the latter company in the Region, 246 miles in Sudbury District, 195 miles in Cochrane, 92 in Nipissing and 86 in Timiskaming.

During 1965, construction of a 64-mile, eight-inch diameter transmission line from Earlton to Noranda and Rouyn in Northwestern Quebec was begun and first deliveries of gas are expected to be made during the summer of 1966. It is anticipated that a large industrial load will develop in this area. Also in 1965, Northern and Central Gas obtained approximately 90 per cent control of Lakeland Natural Gas Ltd., a distribution utility serving the north shore of Lake Ontario, midway between Canada's two largest markets. In the same year the company extended service to a number of communities within the Region—Mattice, Moonbeam, Swastika, Warren, Lively and Creighton.

The Northeastern Ontario Region forms a major portion of the company's operating area. In 1963, for example, 56 per cent of the customers, 95 per cent of total gas sales and 61 per cent of pipeline mileage were in the Region. During that year a 10-mile pipeline was laid into the Adams iron mine of the Jones and Laughlin Steel Corporation, south of Kirkland Lake. The mine is now using some 2.5 million cubic feet of gas per day in the pelletizing of iron ore. Natural gas is also the main fuel used at the International Nickel Company's iron ore recovery plant in Copper Cliff. By the end of 1964, more than 29,000 customers in 25 communities from Hearst to North Bay and along extensions to Timmins and Sudbury, were served by the company. Of these customers, 26,565 were residential (2,000 more than in the previous year), 2,473 were commercial (111 more than in 1963) and 87 were industrial. Important new industrial loads in the Region

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recently contracted by the company are 3,500 MCF/D (thousand cubic feet per day) for the Sherman Iron Ore Mine at Timagami and 3,200 MCF/D for Texas Gulf Sulphur Co. Ltd. near Timmins. Load increases of 2,000 MCF/D for Canadian Johns-Manville Co. Ltd. at North Bay, and 700 MCF/D for the Abitibi Paper Co. Ltd. mill at Smooth Rock Falls have also recently been announced.

Approximately three-quarters of the natural gas sold in the Region is used for industrial purposes. In 1964, 19 million MCF were used for industry, three million MCF for residential purposes and 2.6 million MCF for commercial purposes. It is used in smelters, in roasters and reverberatory furnaces, in the pelletization of iron ore, in the production of plywood and particle board, the manufacture of bricks, and in bakeries, dairies, bottling plants and breweries. It is also used in space heating, steam generation, air conditioning and refrigeration. The International Nickel Company of Canada Limited is the largest consumer of natural gas in the Region and one of the largest consumers in North America. The paper mills of the Region are also very large users of natural gas—for steam generation.

In 1964, Trans-Canada Pipe Lines Limited announced a \$44 million expansion program. Five new compressor stations—to keep natural gas moving in the lines between Alberta and Eastern Canada—were built in Northeastern Ontario. These are located at Swastika, Kapuskasing, Calstock, Potter and Marten River.

Natural gas is not yet available in either Algoma or Manitoulin districts. Great Northern Gas Company, Limited serves Sault Ste. Marie with a propane/air mix gas which is completely interchangeable with natural gas. Total consumption in 1964 amounted to 201,700 M.C.F. At that time there were 2,181 domestic, 67 commercial and 17 industrial customers.

The company also markets propane through its North Shore Propane Division. The area served follows Highway No. 17 north from Sault Ste. Marie to White River and east from Sault Ste. Marie to Espanola and Little Current, and along Highway No. 129 north from Thessalon to Chapleau and Foleyet. In 1964, 2.5 million Imperial gallons of propane were used by 2,564 consumers.

KENORA
(PATRICIA PORTION)

ALBANY

LAKE
IAAB L.
SANDBANK L.
PLEDGER L.

ALBANY R.
YODING R.

MOSK R.

COCHRANE

MISSINIBI R.

MATAGAN R.

ABIBI R.

MUSK R.

SESAGAMI R.

THUNDER
BAY

NAGAGAMI L.

HORNEPAYNE

MATANITCHET L.

KABINAKAGAMI I.

MATANITCHET L.

KAPUSKASING

ISLAND FALLS (APC)

SMOOTH ROCK FALLS

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Manufacturing

Although a growing diversity in manufacturing is apparent in Northeastern Ontario, this industry is still primarily related to the natural resources of the Region. Three major industrial groups—primary metal industries, paper and allied industries and wood industries—account for 90 per cent of selling value of factory shipments within the Region, 85 per cent of the manufacturing employees and 88 per cent of the salaries and wages.

SELECTED STATISTICS OF MANUFACTURING, NORTHEASTERN ONTARIO REGION, 1957 TO 1963

	<u>Establishments</u>	<u>Employees</u>	<u>Salaries and Wages</u>	<u>Value of Shipments of Goods of Own Manufacture</u>
	No.	No.	\$000's	\$000's
1957.....	525	29,717	130,682	696,611
1958.....	501	26,545	119,306	579,500
1959.....	485	29,273	136,836	736,988
1960.....	518	29,197	140,587	753,121
1961.....	444	29,455	145,836	796,929
1962.....	447	28,878	147,854	793,138
1963.....	423	28,442	150,396	781,701
% Change				
1963/1957.....	-19.4	-4.3	15.1	12.2
1963/1962.....	-5.4	-1.5	1.7	-1.4

Note: Statistics for the years 1961-1963 are not strictly comparable with those for earlier years because of revisions in the Standard Industrial Classification and the introduction of a new establishment concept.

In 1963, the most recent year for which even partial statistics are available, total value of factory shipments stood at \$781.7 million. This was two per cent below the peak reached in 1961 and 1.4 per cent below the 1962 level. The decline is largely the result of decreases which occurred in the District of Sudbury where value of shipments dropped by more than \$70 million between 1961 and 1963 and by \$36.6 million between 1962 and 1963. This decrease was caused, at least in part, by a cut-back in operations by the country's two major nickel producers. This cut-back began in the fourth quarter of 1962 and continued throughout 1963. It may be anticipated that value of manufacturing shipments will show an increase in 1964 and 1965.

The District of Sudbury makes the largest contribution to the Region's manufacturing activity as a whole, followed by the District of Algoma. Sudbury accounts for close to 50 per cent of the total value of shipments and Algoma for slightly more than 30 per cent. Cochrane makes up 12 per cent of shipments and the remaining eight per cent comes from Nipissing, Timiskaming and Manitoulin. Sudbury and Algoma together account for about 73 per cent of total employees and 76 per cent of payrolls.

Between 1962 and 1963, value of shipments in Algoma rose by \$23.5 million to \$255.6 million. This was by far the largest dollar increase in the Region. Value

NORTHEASTERN ONTARIO REGION

SELECTED STATISTICS OF MANUFACTURING BY DISTRICTS,
NORTHEASTERN ONTARIO REGION, 1963

	Establishments No.	Employees No.	Salaries and Wages \$000's	Value of Shipments of Goods of Own Manufacture	
				\$000's	% Change 1963/1962
A—Clay Belt					
Cochrane.....	76	4,142	21,134	96,430	-2.3
Nipissing.....	83	2,559	11,074	44,427	4.4
Timiskaming.....	61	1,061	3,932	16,650	15.6
Sub-total.....	220	7,762	36,140	157,507	1.2
B—Nickel Range					
Manitoulin.....	13	48	131	929	-13.9
Sudbury.....	116	9,789	50,912	367,700	-9.1
Sub-total.....	129	9,837	51,043	368,629	-9.1
C—Sault					
Algoma.....	74	10,843	63,213	255,565	10.1
Total, Northeastern Ontario Region.....					
	423	28,442	150,396	781,701	-1.4

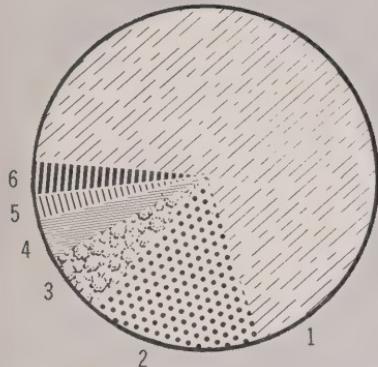
of wages and salaries also increased, by eight per cent, although the number of employees was slightly below the 1962 level. Nipissing and Timiskaming each increased their selling value, by about four per cent and 16 per cent, respectively. Declines were reported in Cochrane, Manitoulin and Sudbury. In Sudbury, value of shipments dropped by nine per cent, the number of employees also by nine per cent and salaries and wages by five per cent. In Cochrane, value of shipments dropped by two per cent although employees and salaries and wages showed increases of five and four per cent, respectively. Shipments in Manitoulin, the smallest of the districts in relation to manufacturing, declined by \$150,000. There was little change in employment or wages paid.

In the Region as a whole, 16 per cent of the labour force is engaged in manufacturing, compared with 19 per cent in mining and 17.5 per cent in services. These three industries together make up more than one-half of the total labour force in the Region. The proportions, of course, vary from district to district, with Algoma having the largest part of its labour force, 28 per cent, in manufacturing and Manitoulin having the smallest, five per cent. Fifteen per cent of the labour force in Nipissing, 14 per cent of that in Cochrane, 13 per cent in Sudbury and nine per cent in Timiskaming are engaged in manufacturing.

By far the largest component of the Region's manufacturing industry is the *Primary Metal Industries* group, reflecting the importance of mining to the economy. This group encompasses a number of categories including iron and steel mills, steel pipe and tube mills, iron foundries, smelting and refining plants and establishments engaged in metal rolling, casting and extruding. Most of the industry is concentrated in the two districts of Algoma and Sudbury.

MANUFACTURING
NORTHEASTERN ONTARIO REGION
MAJOR INDUSTRIAL GROUPS
1962

Value of Shipments
of Goods



In 1962, 12 establishments and 15,840 people were engaged in the primary metals group. Selling value of factory shipments, in excess of \$540 million, accounted for 68 per cent of total selling value for the Region. This was, however, nearly four per cent below the 1961 level. The decline was due, at least in part, to a cut-back in nickel production by the International Nickel Company and Falconbridge Nickel Mines during the fourth quarter as a result of surplus capacity and some excess of production over consumption. Reduced operations continued throughout 1963. Early in 1964, however, about 50 per cent of the cut-back was restored and during 1965 operations were carried out at full capacity.

Most of the smelting and refining operations in the Region are carried out in the Sudbury Basin. The International Nickel Company of Canada, Limited owns and operates a number of plants in this area. These include concentrators at Copper Cliff, Creighton and Levack; smelters at Copper Cliff and Coniston; a recovery plant of high grade iron ore at Copper Cliff; and refineries for copper, gold, silver, selenium and tellurium, semi-refined platinum metals and nickel sulphate at Copper Cliff. A process research laboratory and pilot plant are also located at Copper Cliff. In addition, the company operates its own hydro-electric generating stations at High Falls, Big Eddy, Nairn Falls and Wabageshik. Some 17,000 persons are employed by the company in the Sudbury area.

In 1956 a \$20 million iron ore recovery plant was put into operation at Copper Cliff to use a new process for the recovery of iron ore which had formerly ended up in smelter slag. The production of premium-grade iron ore pellets was so successful that in 1961 a \$50 million extension was undertaken to triple the

NORTHEASTERN ONTARIO REGION



Major reduction plant of The International Nickel Company of Canada, Limited, Copper Cliff
Courtesy — George Hunter.

capacity of the plant. The enlarged plant produces over 750,000 tons of premium-grade iron ore pellets as well as nickel in the form of high-purity nickel oxide.

A new oxygen plant, larger than any now in operation in the world, went on stream in the summer of 1965. The new Oxyton will operate in conjunction with the original unit to provide an oxygen-producing capacity of well over 1,000 tons per day. Late in 1965, a multi-million dollar plant to produce Nickel Oxide Sinter 90, a new form of primary nickel, went into production at Copper Cliff.

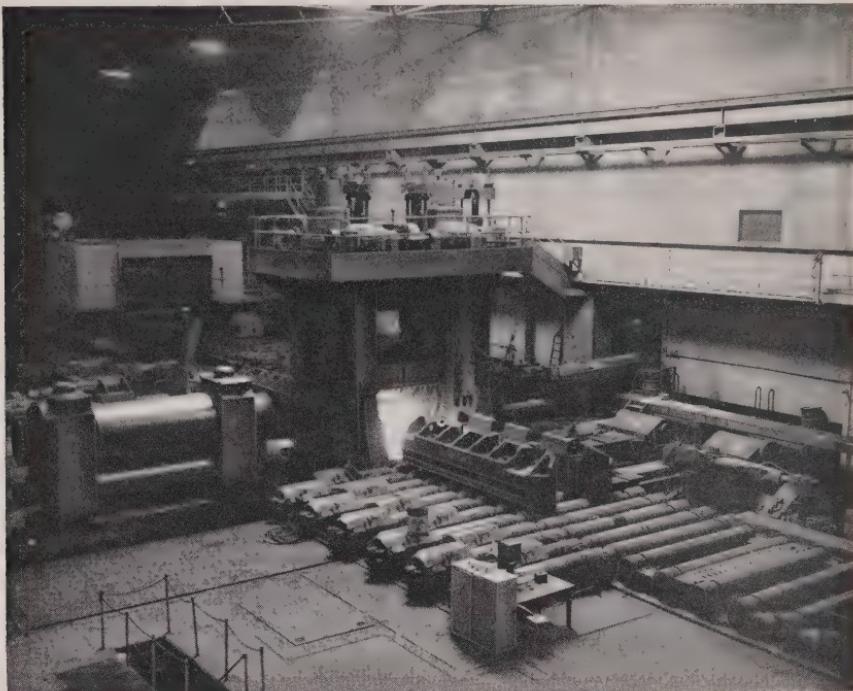
The major operation carried out by Falconbridge Nickel Mines Limited in the Sudbury area is the smelting of nickel-copper ores at Falconbridge. In addition to nickel and copper, products include refined gold, silver, cobalt, platinum, palladium, iridium, rhodium, ruthenium, liquid sulphur dioxide and selenium residues. Some 2,700 persons are employed in the mining and reduction divisions.

Falconbridge Nickel Mines has approximately 75,000 acres in the Sudbury area but its main property consists of 6,000 acres located in the townships of Falconbridge and Garson. At present, the Falconbridge nickel refinery is located in Kristiansand, Norway. The possibility of a second refinery, located in North America, is under consideration. It was announced in 1965 that productive capacity would be increased from 75 million to 100 million pounds annually by late 1967 or early 1968, with the construction of additional concentrating, smelting and refining facilities.

Operations at Cobalt Refinery Limited consist of custom smelting and refining. Its main products are silver, refined arsenic, cobalt oxide and nickel oxide. Between 60 and 70 persons are employed by the Refinery.

The Algoma Steel Corporation Limited, Canada's second largest steel producer, is located in Sault Ste. Marie. In its fully integrated operation it produces coke, coal chemicals, pig iron and a variety of steel products such as blooms, billets and slabs; light and heavy structural shapes; parallel flange beams; tube rounds for seamless tubing; heavy and light rails and rail fastenings; merchant bars; reinforcing bars; sheared plate; universal plate; hot rolled sheet and strip; cold rolled sheet and strip; skelp; grinding balls and rods.

During 1965, for the fifth consecutive year, production of iron and steel products rose and new records were established. In addition, two new products were introduced—welded wide flange beams in sizes from 27" to 48" and wide cold rolled strip. Production at the Steelworks, Sault Ste. Marie and Canadian Furnace Division, Port Colborne stood at 1,447,000 net tons of coke, 2,289,000 net tons iron and 2,486,000 net tons of steel ingots. Production of iron for sale was concentrated on the blast furnace at Port Colborne to release as much iron as possible at the Steelworks for steelmaking. The increase of about eight per cent in steel ingot production resulted from the first full year's operation of the three L-D Oxygen Steel furnaces. Sixty per cent of all steel was produced in these furnaces.



Courtesy — Ontario Department of Tourism and Information.

Interior view of The Algoma Steel Corporation, Limited plant, Sault Ste. Marie

Output of sinter by the Algoma Ore Properties Division at Wawa, 150 miles north of Sault Ste. Marie, reached 1,822,000 gross tons, about two per cent higher than in 1964. Approximately 90 per cent of the sinter produced was used in Algoma's blast furnaces. Most of the coal for coking at the Steelworks comes from a wholly owned subsidiary, Cannelton Coal Company, in West Virginia.

Steel shipments reached an all-time record of 1,768,000 tons and exceeded 1964 shipments by almost six per cent. Exports of ingots, which accounted for 11 per cent of all shipments in 1964, increased to 14 per cent in 1965.

Capital and mine development expenditures during 1965 totalled \$25.2 million. In September, the company authorized a major expansion program, integrated to include coal, ore, iron, raw steel and finished steel products, which would increase annual raw steel capacity by about 40 per cent. The program is estimated to cost about \$175 million and is planned to be completed by mid-1970. The objectives are to increase annual production capacity for raw steel by 1,000,000 tons to 3,750,000 tons and for finished steel products by 1,150,000 tons to approximately 2,800,000. In 1966, capital expenditures are expected to reach \$50 million.

Also located in Sault Ste. Marie is the Mannesmann Tube Company Ltd. This company employs over 500 persons in the production of hot rolled seamless casing, line pipe, standard pipe, mechanical tubing and pressure pipe.

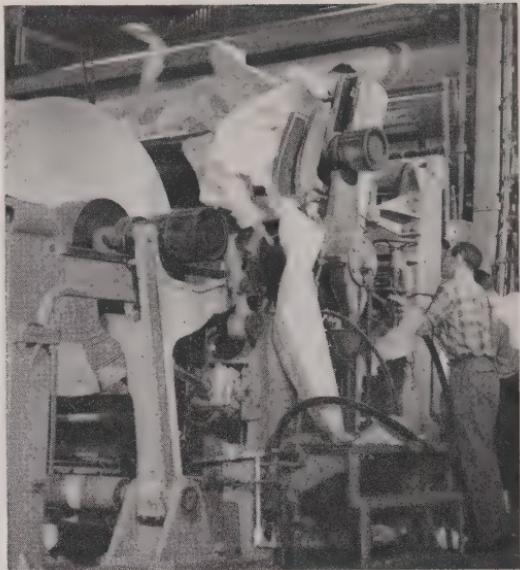
Bronze and brass castings, babbitt metals and grinding balls are also produced in the Region, by Rahn Metals Limited (about 50 employees), North Bay, Neelon Steel Limited (35), Sudbury and Wendell B. Brewer Limited (20), Timmins.

The second most important manufacturing group in Northeastern Ontario is *Paper and Allied Industries*. This group, made up entirely of pulp and paper producers, accounts for some 16 per cent of total manufacturing shipments in the Region—\$131.1 million in 1962. This was six per cent higher than in 1961. That same year, about 5,100 persons were employed in the industry. Value of shipments declined in 1963, largely because of newspaper strikes in New York and Cleveland. Preliminary figures for 1964 indicate that a record of nearly \$138 million was reached.

The Abitibi Paper Company Limited operates four plants in Northeastern Ontario—at Iroquois Falls, Smooth Rock Falls, Sturgeon Falls and Sault Ste. Marie. Production at the Iroquois Falls Division, where some 1,200 persons are employed, includes newsprint paper and wrapper stock. Late in 1965 a \$15 million bleached kraft pulp mill was brought into production at Smooth Rock Falls. More than 350 persons are employed at this plant. Corrugating medium, hardboard and particle board are manufactured at the Sturgeon Falls Division which has about 570 employees. A \$3,000,000 expansion and renovation program for this plant was announced in April 1966. The two-year program, scheduled to start this fall, will increase production capacity of corrugating medium paper by 30 per cent, to 220 tons a day. The Sault Ste. Marie Division produces newsprint paper and groundwood specialty papers. Some 600 persons are employed at this division. These employment figures do not include persons engaged in woods operations.

K.V.P. Company Limited in Espanola employs some 1,300 people in the production of bleached and unbleached kraft pulps, specialty papers for printing, parchments, turpentine and tall oil. A \$17.6 million program of expansion is under way which will double its bleached kraft production capacity to 650 tons per day. Completion is expected late in 1966 or early in 1967. Spruce Falls Power and Paper Company Limited produces newsprint, bleached sulphite pulp and magnetite pulp at its mill in Kapuskasing. It also owns and operates hydro-electric plants at Smoky Falls and Kapuskasing. A \$20 million expansion program is being carried out to increase production capacity by 50,000 tons net per year. Spruce Falls employs approximately 1,400 people. Kimberly-Clark Canada Ltd., also located in Kapuskasing, makes groundwood and sulphite pulp and cellulose tissue wadding and employs about 75 persons.

The *Wood Industries* is the third most important manufacturing group in the Region, accounting for six per cent of selling value of shipments and 13 per cent of manufacturing employees. Value of shipments in 1962, \$47.8 million, was



Courtesy — H & S Reliance Ltd.

Paper machine at the Spruce Falls Power and Paper Company, Limited plant, Kapuskasing

nearly eight per cent higher than in 1961. This group includes sawmills, sash, door and planing mills, manufacturers of plywood and veneer, particle board mills, wooden box factories, coffin and casket manufacturers, etc. In 1962, there were 133 such establishments and about 3,600 employees. Something over one hundred sawmills accounted for \$34.2 million in shipments; 15 sash, door and planing mills for \$3.1 million, and seven plywood and veneer plants for \$8.5 million.

Establishments in this group are scattered throughout the Region, from Mattawa to Sault Ste. Marie and from Cochrane to Hearst. Weyerhaeuser Canada Limited, Sault Ste. Marie, employs about 600 persons in the production of birch, maple and elm veneers, birch, maple and elm lumber and hardwood flooring. Veneer and lumber are also produced in the Mattawa plant which employs about 275 persons. Henry Selin Forest Products Limited, Hearst, turns out softwood and hardwood lumber and softwood chips and employs about 385 persons. McFadden Lumber Co., Division of Domtar Construction Materials Ltd., with about 350 employees, produces rough and dressed lumber, mouldings and panelling and pulp chips in Blind River. Some of the other companies in the Region are Rudolph-McChesney Lumber Company Ltd., Timmins, mining timber, ties, poles, pilings, pallets and wire-bound boxes; Birchland Veneer Limited, Thessalon, birch veneer; William Milne & Sons Limited, Timagami, rough and dressed white and red pine lumber and pulp chips; Cochrane Enterprises Ltd., Cochrane, poplar, birch and spruce veneer and plywood; Levesque Plywood Limited, Hearst, poplar and birch ply-

wood; Kokotow Lumber Limited, Kirkland Lake, rough and dressed lumber, pulpwood, mining timber and ties; Jamar Plywood Limited, Kirkland Lake, poplar and birch plywood and flakeboard; John W. Fogg Limited, Cochrane, lumber, pulpwood, mining timber, ties and chips; and Gosselin Brothers, Hearst, spruce and jack pine lumber and mining timbers. About 100 persons are employed by each of these companies. Both Cochrane Enterprises Ltd. and Levesque Plywood Limited were destroyed by fire in 1964 but rebuilt and re-opened their operations the following year.

Many other types of products are manufactured in Northeastern Ontario. Those in the *Foods and Beverages* group accounted for \$30.6 million in selling value of shipments in 1962. Dairy factories made up the largest part of this total, followed by bakeries, soft drink manufacturers and breweries. The largest producer of dairy products is Eplets Ice Cream Limited, New Liskeard, manufacturer and distributor of ice cream and butter, and its subsidiary Eplets Dairies Limited, also located in New Liskeard. Doran's Northern Ontario Breweries Ltd., makers of ale, lager and soft drinks, employs some 200 persons in three plants, one each in Sault Ste. Marie, Sudbury and Timmins.

Chemicals and Chemical Products such as sulphuric acid, nitric acid, liquid sulphur dioxide, urea-formaldehyde, phenolformaldehyde, oxygen, acetylene gas, commercial explosives and blasting agents, refined tar, pitch and creosote are produced in the Region. Canadian Industries Limited in Copper Cliff; DuPont of Canada Limited, North Bay; Domtar Chemicals Limited, Tar and Chemical Division, Sault Ste. Marie; Canadian Liquid Air Limited, Sudbury; and The Borden Chemical Company (Canada) Limited and Reichhold Chemicals (Canada) Limited, both of North Bay are the major producers. In 1962, seven establishments with 427 employees shipped goods valued at \$16.5 million, a 20 per cent increase over 1961.

Canadian Industries Limited has announced that it will spend some \$6,000,000 on expansion of its sulphuric acid manufacturing facilities. It is expected that the program, to be completed early in 1967, will more than double the plant's capacity, resulting in an additional production of 660 tons of sulphur dioxide a day for agricultural uses.

Grouped under the heading *Metal Fabricating Industries* are some 25 establishments involved in the design, fabrication and erection of structural steel plate work, the production of diamond set tools including diamond bits for mining, the manufacture of machinery and equipment for pulp and paper and mining companies, and the making of ornamental iron work, tanks and bins and industrial drilling equipment. In 1962, over 600 persons were employed in these establishments and products shipped out were valued at \$7.7 million. Among the companies so engaged are Canadian Longyear Ltd., Christensen Diamond Products Co. (Canada) Inc., Inspiration Ltd. and R. J. Minogue & Co. Ltd., of North Bay; Morissette Manufacturing & Sales Ltd., and N. Morissette Diamond Drilling Ltd., Haileybury; Heath &

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Sherwood (1964) Ltd., and Kirkland Lake Machine & Welding Ltd., Kirkland Lake; Noront Steel Construction Co. Ltd., Sudbury; and Soo Foundry & Machine Company Limited, Sault Ste. Marie.

Concrete products, ready-mix concrete, bricks, blocks and tiles are made by some 20 establishments in the Region. These are located in Sudbury, North Bay, Sault Ste. Marie, Timmins, Massey and Earlton. The Canadian Johns-Manville Company Ltd., North Bay, also produces construction materials. These include roof insulation, sheathing, interior building board, decorative and acoustical ceiling panels and incombustible mineral wool board ceiling panels. About 250 persons are employed. Development of an asbestos mining and milling operation in Reeves Township, southwest of Timmins, was announced by the company in the spring of 1966. Production of asbestos fibre is scheduled to start in 1968 at an annual rate of 25,000 tons. Production from the open-pit mine will be used in the manufacture of asbestos cement products, primarily water, sewer and irrigation pipe. The Hedman Mines Limited is producing a short asbestos fibre at Matheson. Capacity of present facilities is being expanded.

Other products manufactured in the Region include plastic pipe and fittings, reinforced plastics, curling stones, canoes and small pleasure boats, and canvas products, i.e. tents and tarpaulins.

Construction

The value of all building permits issued in Northeastern Ontario in 1965 totalled \$51.5 million, \$0.9 million below the level reached in the previous year and \$8.7 million below the 1962 peak of \$60.2 million. Much of the decline can be attributed to the drop in value of permits issued for residential purposes. In 1962 this sector, valued at \$30 million, accounted for 50 per cent of the total; by 1964 it had dropped to \$22 million and accounted for only 42 per cent; and in 1965, made up only 36 per cent of the total. Further evidence of a decline in residential construction is the drop in number of new dwelling units started in some of the large population centres. In North Bay, for example, only 29 new dwelling units were started in 1965 compared with 39 in 1964 and 153 the previous year. In Sudbury there were 280 in 1965 as against 419 in 1963 and 1,054 in 1962 and in Sault Ste. Marie, 325 compared with 616 in 1964 and 693 in 1963. Timmins, on the other hand, showed an increase, with 86 new dwellings started in the city and 111 in the urban area compared with 74 and 82 in 1964 and 65 and 84 in 1963.

Institutional and government permits account for somewhat more than one-third of the total value of permits issued. In 1965, value stood at \$19.8 million, 20 per cent higher than in 1964 but two per cent below the peak reached in 1962. Value of commercial permits issued declined during the year, to \$10.9 million from the record of \$12.7 million reached the previous year. Industrial permits, however, were 68 per cent higher, \$2.2 million compared with \$1.3 million.

Both Federal and Provincial governments have a number of construction projects under way in the Region. The Federal Department of Public Works spent an estimated \$416,000 in Northeastern Ontario during the fiscal year ending March 31, 1966. Projects included dredging at Little Current and Moose Factory, harbour improvements at Sault Ste. Marie and a new public building at Moosonee. Harbour improvements in Little Current and Sault Ste. Marie, dam repairs in Timiskaming and additions and alterations to public buildings in Cochrane, Sturgeon Falls and Sudbury are under consideration for the current fiscal year. The Department of Transport also made considerable expenditures during the fiscal year. An agency development depot at Sault Ste. Marie, rehabilitation of runways and lighting at the Kapuskasing airport, a traffic control and storage building at the North Bay airport and a water supply system, emergency power plant and sand storage at Timmins are all part of the program. In addition, the Meteorological Station at Moosonee is being relocated to larger premises to permit more efficient operations. It is anticipated that renovations and improvements to the airports at Kapuskasing and Timmins will be carried out in the current fiscal year.

The Ontario Department of Public Works is also engaged in a construction program in Northeastern Ontario. This amounts to \$3.3 million in works already completed and \$4.6 million to be spent during the fiscal year 1965-1966. Further expenditures amounting to \$7,750,000 are in various stages of planning.

NORTHEASTERN ONTARIO REGION

Work on the Northeastern Psychiatric Hospital at Porcupine, near Timmins, was begun in December 1964. When completed it will accommodate 300 patients. Total cost is expected to be about \$5,250,000. The Ontario Vocational Centre at Sault Ste. Marie, completed during the summer of 1965, cost approximately \$2.5 million, exclusive of furnishing and equipment. It will provide, for the first time in this part of the Province, vocational training in a broad range of trades. About 600 students can be accommodated.

Other Provincial projects include an O.P.P. District Headquarters building in South Porcupine, about 75 per cent completed at the end of 1965. Total cost will be about \$315,000. A \$140,000 O.P.P. detachment building and a \$50,000 Highway's patrol garage were completed in White River early in 1965. A new Registry building is being built in Haileybury at a cost of \$220,000.

Additional projects costing some \$7,825,000 have been planned for the Region. A \$110,000 tourist reception centre at Sault Ste. Marie has been approved for construction while the following have been approved for planning: a \$1,650,000 reformatory in the Sudbury area, a \$1,675,000 teachers' college in Sudbury, the second stage of construction at the Institute of Technology at Kirkland Lake estimated at \$3,500,000, a \$715,000 clinical services unit for the Ontario Hospital at North Bay and a Lands and Forests Department District office building in Cochrane, estimated to cost \$225,000.

The Ontario Housing Corporation is involved in the building of family and senior citizen housing units in a number of communities in the Region. Construction is under way in Cochrane, Mattawa and Sudbury; tenders have been called on units in Chelmsford, Sault Ste. Marie and Teck Township; and surveys of need and demand have been undertaken in Black River, Gore Bay, Hearst and Matheson. Other communities have requested that surveys be made.

In addition to government construction programs, many individuals and institutions are erecting new buildings and expanding existing ones, some, of course, with the assistance of the Government. Up to the end of 1964, some \$9 million had been spent on construction at Laurentian University at Sudbury. It has been estimated that an additional \$14.5 million will be spent by 1970. Construction of the new addition to the Civic Hospital in North Bay is under way. The project, costing some \$4 million, is expected to take two years to complete.

Several large companies such as The Algoma Steel Corporation, The International Nickel Company of Canada Limited, Falconbridge Nickel Mines Ltd., The K.V.P. Company Limited and Abitibi Paper Co. Limited have undertaken new construction. Reichhold Chemicals (Canada) Limited has completed construction of a \$350,000 resin-producing plant in Widdifield Township; Allied Chemical Canada Ltd., opened a \$500,000 plant at Nellie Lake for the production of aluminum sulphate, used in pulp and paper mills and water purification plants. Cochrane Enterprises has built a new plywood plant in Cochrane to replace the one destroyed by fire late in 1964; Levesque Plywood Ltd., Hearst, has also rebuilt.

Dominion Stores Limited and F. W. Woolworth Co. Ltd. have each built a new store in Sault Ste. Marie, while M. Loeb Limited has built large warehouse facilities in Sudbury. Other projects include additional warehousing facilities to serve Northeastern Ontario to be built in North Bay and a shopping plaza planned for Kirkland Lake.

In 1965, plans for 27 construction projects, each valued at \$100,000 or more, were approved by the Ontario Department of Labour. Total value of these projects was approximately \$7 million. Four, with a combined value of about \$1.6 million or 24 per cent of the total, were planned for Sault Ste. Marie and seven, with a similar combined value, for Sudbury. These two centres accounted for nearly half of the value of plans approved in the Region. Espanola, Chapleau, Cochrane, Timmins, Kapuskasing, Hearst, Kirkland Lake and New Liskeard also had plans for projects individually valued at \$100,000 or more approved in this period. In the first two months of 1966, five such projects with a total value of \$2.6 million were approved. Three of these were located in Sault Ste. Marie.

Housing Conditions and Household Facilities

In 1961, the most recent year for which information is available, there were approximately 119,000 occupied dwellings in the Northeastern Ontario Region. As in the Province as a whole, single detached homes far outnumber all other types of dwelling—70 per cent of all dwellings were single detached, 21 per cent were apartments or flats, about 8 per cent were single attached and one per cent were mobile. More than one-third of all the mobile homes in Ontario were in the Northeast and most of these were in Algoma.

About two-thirds of the homes in Northeastern Ontario are owner-occupied. This is slightly below the level in the Province, where 70.5 per cent of dwellings are lived in by their owners. In the ten years between 1951 and 1961 the number of owner-occupied dwellings in the Region increased by 43 per cent while the number of rented dwellings rose by only 31 per cent. Sault Ste. Marie has, relatively, more owner-occupied dwellings than any other large centre in the Region—75 per cent of the homes in the urban area of the city, 71 per cent of those in the city proper and 86 per cent of those in the fringe areas. Sudbury, on the other hand, had the lowest proportion, with 56 per cent of the homes in the urban area being occupied by their owners, 57 per cent of those in the city proper and 55 per cent of those in the fringe areas.

Only 67 per cent of the occupied dwellings in the Region were reported to be in good condition in 1961. This compares unfavourably with the 76 per cent in the Province as a whole. The proportion of homes in good condition ranged down from 72 per cent in Sudbury District to 57 per cent in Timiskaming. Nearly nine per cent of the total needed major repairs. The highest proportionate level of such need was found in Manitoulin District (12 per cent) and the lowest in Sudbury (7 per cent). It might be noted, however, that the 12 per cent in Manitoulin represented only 333 dwellings while the 7 per cent in Sudbury involved 2,595.

Reflecting to some extent the relative newness of settlement in the North, less than 18 per cent of the occupied dwellings in the Region were built prior to 1920, while 35 per cent of all homes in the Province were built before that year. Thirty-six per cent were constructed between 1920 and 1945, however, compared with 22 per cent of those in the Province.

In 1961, some 60,700 homes in the Region were classed as single detached, owner-occupied and non-farm. Of these, 12 per cent were valued at less than \$3,000, 37 per cent at less than \$7,500 and 68 per cent at less than \$12,500. Comparable figures for the Province as a whole were 3, 18 and 48 per cent. The median value of these homes was highest in Sudbury (\$11,264) and Algoma (\$11,236) and lowest in Manitoulin (\$4,775). Nipissing was third highest with a median value of \$10,426, followed by Cochrane, \$7,319 and Timiskaming \$5,053. The median value of similar homes in the Province as a whole was \$12,952. The incidence of mortgages on these homes was considerably below the level in the Province—60 per cent carried no mortgage compared with 47 per cent with no mortgage in the Province. In Manitoulin District, 91 per cent or 1,466 homes had no mortgage.

while in Sudbury and Algoma only 53 per cent were owned outright. This may reflect the average value of homes in the respective areas.

The Ontario Housing Corporation has been active in the Region during the past two years. In the District of Algoma, tenders have been called on 76 family housing units in Sault Ste. Marie, and two proposals have been selected and submitted to the Canadian Mortgage and Housing Corporation. The City has also requested that 40 senior citizen units be built. A 68-lot land assembly project has been initiated in Michipicoten Township.

In Cochrane District, 16 units have been contracted in Timmins and a request has been received for an additional 30 family and 12 senior citizen units. Thirty family units are being built in Cochrane. Surveys of need have been carried out in Hearst (both family and senior citizen housing), Matheson (senior citizen housing) and Black River (both family and senior citizen housing). A request for 16 units has been received from Calvert Township and contracts are about to be awarded. A 39-lot land assembly project has been completed in Tisdale. A resolution has been received from Kapuskasing for 25 family and 24 senior citizen units. Development is awaiting completion of services in Brunetville. Sixteen family units were completed in 1964 under the Federal-Provincial housing plan. A senior citizen survey has been completed in Gore Bay on Manitoulin Island and a resolution requesting 10 senior citizen units has been made.

In Nipissing District, 20 family units are under construction at Mattawa. A resolution for 15 family units has been received from North Bay and a survey has been requested by Widdifield Township. A survey of Sturgeon Falls has been completed.

Eighty-three family units are under construction in the City of Sudbury and contracts have been awarded for a further 70. A proposal for 15 senior citizen units has been referred and a request for 30 family units has been received. Tenders have been called for the construction of eight family units in Chelmsford and Blezard has requested a survey for both family and senior citizen housing. In Timiskaming District, tenders have been called for 30 family and 10 senior citizen units in Teck Township, while Hudson Township has requested a survey of family and senior citizen housing needs.

Most homes in the Region are now equipped with a wide range of household conveniences and facilities—each year these become available to more families, due either to greater accessibility or higher incomes. Comparisons with 1951 are not available for all categories. In 1961, 89 per cent of occupied dwellings had running water, 94 per cent had mechanical refrigeration of some kind and 71 per cent had a passenger car compared with 72, 62 and 37 per cent, respectively, in 1951. Also in 1961, 83 per cent of homes had flush toilets, 76 per cent had bath facilities, 84 per cent had a television receiver and nearly 15 per cent had a home freezer.

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Hot air furnaces have become the most popular means of heating homes in the Region. Between 1951 and 1961 the number so heated considerably more than doubled, to 59,700. Steam or hot water furnaces are also widely used. Only about one-third of the homes are heated by stoves or space heaters. Furnaces of all kinds apparently find greatest favour in Sudbury District where they were installed in 75 per cent of the homes, and least in Manitoulin, 31 per cent. The greatest increase in furnace use between 1951 and 1961 took place in Algoma District where the number increased by 172 per cent, Sudbury (137 per cent) and Nipissing (129 per cent), reflecting the presence of large population centres and the easier distribution of fuel.

Throughout the Region, fuel oil is the most frequently used source of heat—64 per cent of homes used it in 1961 compared with 18 per cent in 1951. Wood still had a slight edge on natural gas but this has, in all likelihood been eliminated by now. Electricity has also entered the heating field in Northeastern Ontario.

Transportation

Transportation is vital to the development of any area and nowhere is this more strikingly illustrated than in the northern areas of Canada. Transportation by land, by water and by air is necessary to permit exploration, to provide access to natural resources, to move raw materials or finished goods to processing plants or ultimate markets, to carry into the area the tools and personnel necessary to its exploitation and settlement, in short, to make manageable all the elements of growth.

RAILWAYS

Northeastern Ontario was largely opened up by the railways. They made possible the discovery and development of important mining fields and forest areas which led, in turn, to the development of population centres and the establishment of secondary industry. Agriculture, too, was encouraged.

The prospect of building a railway across the Canadian Shield was formidable, indeed, and the first one was attempted only as a condition of the entry of British Columbia into Confederation. This first Canadian transcontinental railway, the Canadian Pacific, was completed in November, 1885. It was built along the Ontario side of the Ottawa River as far as Mattawa, west through the present centres of North Bay and Sudbury, then northwest through Chapleau and White River to the Lakehead and Western Canada. It was while the line was being laid at Sudbury that the famous nickel deposits were discovered. A branch line was later built from Sudbury to Sault Ste. Marie and thence into the United States, while a short line was laid to connect Little Current on Manitoulin Island to this branch. Direct connection with Toronto is made by means of a line running south from Sudbury through Parry Sound.

During the early 1900's, with the rapid growth of the Canadian West, a second transcontinental line, the Canadian Northern, was built. When it was taken over by the Canadian Government in 1918, this line consisted of 9,362 miles of track, with part of the main line running in a northwesterly direction through Northeastern Ontario—through North Bay, Capreol and Hornepayne and thence to the Lakehead and the West.

During the same period a third transcontinental line was constructed. Part of this line, known as the National Transcontinental, began at Moncton, N.B., passed through Quebec City and entered Ontario north of Lake Abitibi. It then proceeded westward, north of the other two lines, passing through Cochrane and Hearst to Winnipeg. At Winnipeg it connected with the Grand Trunk Pacific which extended to the Pacific Coast.

Over the years, and especially since the end of World War II, both the C.P.R. and C.N.R. have undergone many changes—dieselization of motive power, centralized traffic control, new services and facilities, and a general modernization of railway plant and equipment. The latest innovation is the consolidation of express

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and less-than-carload freight handling and the establishment of regional terminals with truck delivery to centres in between. Customers in the smaller, scattered communities are thus afforded greatly improved railway communications and service.

The Canadian Pacific Railway has more than 700 miles of main track in Northeastern Ontario and provides frequent freight and passenger service through both North Bay and Sudbury and also west to Sault Ste. Marie. Much of the local freight traffic is handled by wayfreights and the frequency of trains depends on the traffic volume. Two piggyback terminals were opened in 1960—one at North Bay and the other at Sudbury—and a third at Sault Ste. Marie, in 1961. It is felt that the rate of growth of piggyback service in this Region is somewhat below normal because of the low density of traffic adapted to this type of service. Over the past two years, considerable improvements have been made to the iron ore handling facilities at Little Current, including the construction of a ship loader.

The Canadian National Railways operates some 600 miles of main line track in Northeastern Ontario, between North Bay and Hornepayne and between the Quebec border and Hearst. CN's two daily transcontinental trains provide passenger service along the North Bay-Hornepayne route through Capreol. Passenger service is also available between Cochrane and Hearst. Connections can be made at Cochrane with O.N.R. trains southbound, and at Nakina, west of Hearst, with CN's transcontinental trains. Frequent freight service connects North Bay and Capreol with Toronto and other industrial areas of Southern Ontario. Through freight trains run daily from Capreol to Hornepayne. Frequent wayfreights serve Hearst, Kapuskasing and Cochrane, and run east from Cochrane to Senneterre in Quebec. Piggyback facilities are available at CN terminals in North Bay and Capreol.

The dream of opening up the North did not stop with east-west railways—a scheme to build a railway to James Bay was projected as early as 1884. Although the resources of the area were unknown, they were assumed to be fabulous and the scheme included the building of an ocean port to facilitate their development.

Construction of the first of the two north-south lines in Northeastern Ontario was begun in 1899 at Sault Ste. Marie. The immediate goal of the Algoma Central Railway was to open up the area to the north of the community, thus making timber and mineral resources accessible and to haul pulpwood and pine logs to the Sault Ste. Marie Pulp and Paper Company, now the Abitibi Power and Paper Company. By 1903, main line rail had been laid for 56 miles north of Sault Ste. Marie and branch line for 21 miles, from Michipicoten Harbour to the Helen and Josephine Mines. All men, materials and equipment for this branch line were transported by boat and scow from Sault Ste. Marie to Michipicoten until 1911 when the branch line was connected to the main line at Hawk Junction. The main line was completed to Hearst in 1914 and no further construction was undertaken. The franchise to build a railway to Hudson Bay was surrendered in the late 1930's.

The main line from Sault Ste. Marie to Hearst is 296 miles in length while the branch line from Hawk Junction to Michipicoten Harbour is 26 miles long, with a spur track to serve the Siderite Mine. At Michipicoten Harbour the railway has dock facilities for the handling of coal and iron ore. In addition, Algoma Central operates eight bulk freight carriers.



Courtesy — Algoma Central Railway.

Algoma Central Railway coal and ore dock, Michipicoten Harbour

In 1952 the railway became completely dieselized, the first line in Canada to achieve this. More recent improvements include the use of specially designed gondola cars to meet the needs of both the steel and forest industries. The inside dimension of 61 feet permits the handling of steel channels and beams up to a length of 60 feet and steel plate to a width of 108 inches. Pulpwood capacity is 34 cords, approximately one-third more than conventional cars. One hundred of these cars were purchased in 1964 and an additional 100 in 1965. During 1965 the company undertook a capital expenditure program of some \$6,000,000. Of this total, \$4.1 million went into vessels, \$1.4 million into gondola cars and the remainder primarily to the final stages of a major track upgrading program.

Mine products account for 71 per cent of total tonnage carried by the railway, manufactured goods for 18 per cent and forest products for 11 per cent. The level of railway revenue tonnage rose from 4,385,385 in 1963 to 4,639,149 in 1964, or by nearly six per cent. The increases were spread uniformly among the three main commodity groups. Passenger service, however, again operated at a sizeable loss, in spite of a small improvement in total passenger revenues which resulted from train tours to Agawa Canyon during the summer-autumn season.

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Actual construction of the second north-south railway line began in October 1902, although the first step towards building the line was taken two years earlier when the Ontario Legislature appropriated \$40,000 to defray the cost of locating a line from North Bay to New Liskeard. In July 1902, the first Temiskaming and Northern Ontario Railway Commission was appointed by Order-in-Council. The functions of general management were to be performed by the Commission.

The immediate objective of the Temiskaming and Northern Ontario Railway was to provide an outlet for the farmers who had already settled at the head of Lake Timiskaming and to afford access to timber stands and mineral deposits in the area. The first mineral find came in August 1903 in what was to become the Cobalt silver-cobalt mining field.

Steel reached New Liskeard in 1904, Matheson in 1907 and Cochrane at the end of 1908. Regular service began to the Porcupine gold field in the summer of 1911, just two weeks before a disastrous fire destroyed the community of Porcupine. Because of increasing silver production in the Gowganda area, a branch line was built from Earlton to Elk Lake in 1912. Another branch was constructed to a new Abitibi Paper Company mill being built at what is now Iroquois Falls. No further construction was carried out until 1922 when the main line was pushed as far north as Fraserdale to facilitate the construction of hydro-electric generating stations at Island Falls and Abitibi Canyon on the Abitibi River. Because of the increasing importance of the Kirkland Lake gold field, a branch line was built from Swastika to Larder Lake in 1923 and was then carried to the Quebec border in 1925 and to Noranda, Quebec in 1927. In 1932 the railway reached Moosonee. Construction then ceased until 1962 when a 4.5-mile spur line was built from Boston Creek to the Jones and Laughlin iron ore mine at Dane. At that time the railway was operating 472 miles of main track—from North Bay to Timmins and from Porquis to Moosonee—and 100 miles of branch line—to Elk Lake, Iroquois Falls, Noranda and Dane.

A five-mile spur extension to the Sherman Mines, a new iron ore development at Timagami, was completed in December 1965. A 16-mile spur to the Texas Gulf Sulphur Company copper-zinc-silver mine near Timmins is now under construction. Ore cars and other equipment will have to be assembled for both these projects.

In 1964 the Adams Iron Mine at Dane went into production and iron ore pellets from this source are moved out at the rate of one million tons a year. Another major freight commodity handled by the O.N.R. is pulp and paper which moves from the paper mills at Kapuskasing, Smooth Rock Falls and Iroquois Falls.

The name Temiskaming and Northern Ontario was changed to Ontario Northland in 1945. The railway is operated by the Ontario Northland Transportation Commission, an agency of the Ontario Government, which also operates the Ontario Northland Communications, Bus Lines, Tourist Services and the subsidiary Star Transfer Limited.

In the early 1960's, a program to improve service and facilities, increase revenues and reduce operating costs was begun. In 1962, in conjunction with the C.N.R., the Ontario Northland introduced rate cuts in most types of carload freight; freight schedules were revised and as much as two days cut from delivery schedules. Modernization of less-than-carload traffic was begun early in 1964 when a new, fast express freight train was placed in service, replacing the old passenger-express train. New bus routes were set up and other passenger trains rescheduled to fill the gap in passenger service. Instead of many small local freight offices, regional terminals were set up with door-to-door truck delivery in surrounding communities. It is expected that piggyback service will be available very shortly.

WATER TRANSPORT

Faced with the prospect of transporting heavily fur-laden canoes around the rushing waters of the St. Marys River rapids, the North West Company in 1797 built a tiny 38-foot-long lock on the Canadian side of the river. Today, a huge lock, 1,200 feet long, 110 feet wide and 32 feet deep is under construction on the American side, at a total cost of approximately \$40.3 million. Its construction, completion of which is scheduled for July 1967, will make feasible the development and use of larger freighters on the Great Lakes. At present, the size of deep draft ships is limited by the dimensions of the MacArthur lock, built in 1943. Although 31 feet in depth, it is capable of passing ships of up to only 730 feet in length and 75 feet in width. Two other locks are in operation on the American side of the river, the Davis and Salin, opened in 1914 and 1919, respectively. Both are 1,350 feet long and 80 feet wide but only 23 feet deep. Only one lock has been built on the Canadian side and as it has a minimum depth of only 18.25 feet, it cannot be used by most bulk carriers.

The canals and locks which bypass the 21-foot drop in water level between Lake Superior and the lower Great Lakes provide a water link between the iron and wheat producing areas to the west and the coal producing areas to the east. It should be noted that the directional flow of traffic on the canal system is grossly unbalanced, with between 85 and 90 per cent of all the tonnage being eastbound. All but a fraction of this traffic is made up of iron ore and grain.

In 1964, nearly 94.9 million tons of cargo passed through all the canals at Sault Ste. Marie. Less than one million tons, or approximately one per cent, passed through the Canadian canal. Paper and woodpulp, manufactured iron and steel, and sand and gravel make up about 60 per cent of the eastbound traffic through the Canadian canal, while fuel oil and gasoline account for 55 per cent of the westbound traffic. Considerably more than half the traffic is eastbound. Tonnage in 1964 was 17 per cent higher than in the previous year, but 23 per cent lower than in 1959. The 93.9 million tons of cargo which passed through the American locks was 10 per cent higher than in 1963 and 35 per cent higher than in 1959.

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Courtesy — Ontario Department of Tourism and Information

Ore dock at Algoma Steel Corporation plant, Sault Ste. Marie

Sault Ste. Marie is not only the largest port in the Region but one of the busiest in the Province. In 1964 it ranked fourth, after Port Arthur-Fort William, Hamilton and Toronto, in total cargo handled, and was third after Hamilton and Port Arthur-Fort William in the amount of international cargo loaded and unloaded. Some 10 per cent of the 5.7 million tons of cargo handled at the port was loaded there—about 24 per cent of coastwise traffic and six per cent of foreign. The remaining 90 per cent was unloaded for use in the plants of the community or for trans-shipment.

Trade with the Great Lakes ports in the United States accounts for more than three-quarters of all the cargo handled at the port, about one-fifth is with other Canadian centres, and residual amounts are shipped to or from Europe, Australia, Africa and Asia. Of the 4.2 million tons of cargo handled in foreign trade in 1964 (233,885 tons loaded and 3,931,603 tons unloaded), 79 per cent comprised the two commodities iron ore and concentrates (1,006,512 tons) and bituminous coal (2,289,404). Both these cargoes were unloaded at the port. Of the 1.5 million tons of coastwise shipping, nearly 1.2 million tons were unloaded at the port, including 508,671 tons of iron ore and concentrates and 259,422 tons of fuel oil. Other ports in the Region include Little Current (1,099,984 tons in 1964), Michipicoten Harbour (468,336 tons), Killarney (119,880 tons) and Cutler (33,239 tons).

The steamship department of the Algoma Central Railway, head office in Sault Ste. Marie, is the oldest continuous Canadian bulk freight carriage operation on the Great Lakes. In 1900, four vessels were bought in Scotland for carrying iron ore and coal. Three passenger ships were purchased at the same time. In July of that year one of the ships loaded the first cargo of iron ore at Michipicoten Harbour for delivery to the Canada Iron Furnace Company at Midland, where it was unloaded into horsedrawn wagons. This was the first cargo of iron ore unloaded by a Canadian ship at a Canadian port.

The Algoma Central now operates eight bulk freight carriers including the M.V. "Roy A. Jodrey" a new \$7.5 million self-unloader delivered in November 1965. This vessel is the most automated ship on the Great Lakes and is capable of carrying some 22,000 tons of ore or 20,000 tons of coal.

The principal cargoes handled by the line are iron ore, coal and grain. The vessels operate on each of the Great Lakes and quite frequently go through to Montreal, Quebec City, Baie Comeau and Seven Islands. Low water levels in Lake Huron and Georgian Bay during 1964 adversely affected steamship operations as ships frequently had to carry less than full loads. Over-all tonnage, however, increased to 3,144,000 from 2,120,000.

In 1945, the Ontario Northland Boat Lines, operated by the Ontario Northland Transportation Commission, provided boat service on Lake Nipissing and the French River. These services have since been expanded and now each year thousands of cottagers and tourists are carried to points which would otherwise be

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inaccessible. The boat cruises are an important tourist attraction at North Bay. In 1964, although the tourist cruise ships continued to require subsidization, passenger loadings and revenues showed an increase and there was some reduction in operating costs.

ROAD TRANSPORT

At the end of 1964, some 11,280 miles of roads were in use in Northeastern Ontario, 13 per cent of the Provincial total. This included nearly 2,000 miles of King's and 1,250 miles of Secondary highways. The main highways in the Region are No. 11, from Toronto through North Bay, Cochrane and Hearst, into Northwestern Ontario, and No. 17, from Eastern Ontario through Mattawa, North Bay, Sudbury, Sault Ste. Marie and White River, to Northwestern Ontario.

Other highways important to the Region are No. 69 into Sudbury from Southern Ontario, No. 101 from the Quebec border through Matheson and Timmins to Chapleau, No. 129 from Chapleau to Thessalon, No. 66, which runs from Matachewan, across No. 11, through Kirkland Lake into Quebec, No. 65 from New Liskeard through Elk Lake to Matachewan, No. 560 west from Englehart through Elk Lake, Gowganda and Gogama and No. 108 to Elliot Lake.

The completion of the two-mile long, \$20 million International Bridge between Sault Ste. Marie, Ontario and Sault Ste. Marie, Michigan in 1962 opened up the scenic 1,200-mile circle tour of Lake Superior to United States tourists and provided Canadians with easier access to many major American cities of the midwest. In addition, the bridge will serve to connect the 5,000-mile Trans-Canada Highway with U.S. Interstate Freeway 75, which when completed will run from the bridge, 1,523 miles to Tampa, Florida.

Several roads and highways are under construction in Northeastern Ontario. Highway No. 807, from Smooth Rock Falls to Fraserdale on the Ontario Northland Railway, was officially opened in July, 1966 while the 80 miles of No. 101 between Chapleau and Wawa are scheduled for completion in the fall. Construction on No. 144, being built to join Sudbury and Timmins, is well under way as is the extension southward from Hornepayne to the Trans-Canada Highway, near White River. Highway improvements are also being carried out in many parts of the Region. One of the largest is the new bridge on Highway No. 129, over the Mississagi River, being built at a cost of nearly one million dollars, including improvement of about six miles of adjoining highway.

In the fiscal year ending March 31, 1965, the Provincial Government paid out a total of \$23.9 million on roads and highways, about \$15 million of which was for new construction and the remainder for maintenance. Largest total expenditure was in Algoma, \$5.9 million, followed by Sudbury, \$5.7 million, Cochrane, \$4.3 million, Nipissing, \$4.0 million, Timiskaming, \$2.4 million and Manitoulin \$1.6 million. Largest expenditures for new construction were made in Sudbury, \$4 million and the smallest in Manitoulin \$996,000.

The number of motor vehicles registered in any Region does not give a completely accurate picture of the traffic on its roads and highways. In Northeastern Ontario, for example, Highway No. 11, the Northern Route of the Trans-Canada Highway, carries much of the transcontinental truck transport traffic and both Number 11 and 17 carry much tourist and commercial traffic in addition to local use.

In 1965, more than 153,000 motor vehicles were registered in the Region, 116,200 passenger cars, 27,560 trucks, tractors and buses and 9,600 dual purpose vehicles. The total number of registrations was 66 per cent higher than 10 years earlier and 4 per cent above the previous year. In the Province as a whole, total motor vehicle registrations increased by 55 per cent during the 10-year period and by 5 per cent over the year. Sudbury District has the largest number of registrations, 50,000, while Algoma registered the fastest rate of growth, 135 per cent during 10 years and 6 per cent during the latest year.

Frequent bus service is available to most of the larger communities in the Region, centres along Highway No. 17 being served by the Gray Coach Lines and those on No. 11 and 101 by the Ontario Northland Bus Lines. Gray Coach Lines buses travel from Montreal to North Bay and Sudbury and from Toronto to Sudbury. Several buses a day leave Sudbury for Sault Ste. Marie and two travel onwards to Vancouver. There is also frequent daily service between Toronto and North Bay.

Since 1964 when the O.N.R. began express freight service and withdrew two main line passenger express trains from use, the one main line bus has been supplemented by two others. There are now two buses a day operating each way between Timmins and North Bay and one bus each way between Cochrane and North Bay. This gives most intermediate points the advantage of three northbound and three southbound connections daily.

Virtually every centre in Northeastern Ontario that is located on a road or highway is served by at least one truck transportation company. The larger communities have many such firms including those operating out of Toronto and connecting with American carriers. Among the larger trucking companies in the Region are Hoar Transport Company Limited, Hume's Transport Limited, Inter-City Truck Lines Limited, Kingsway Transports Limited, Walter Little Transport, McKinley Transport Limited, Motorways (Ontario) Ltd., Smith Transport Limited, Star Transfer Ltd. and the Canadian Pacific Express Company. Express service in Northeastern Ontario has received great impetus in the past few years from technological improvements such as containerization, which have enabled companies to provide faster service to their customers.

AIR TRANSPORT

In the remote and sparsely populated areas of Northern Ontario there is little, if any, effective ground transportation. Air services in such areas, in addition to providing the main link with the outside world, are essential to the exploration and

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development of natural resources. They also play an important role in the system of communications within the arctic regions of Canada, facilitating the transportation of persons and goods to isolated camps and settlements.

One of the earliest private companies to operate in Northeastern Ontario was Austin Airways Limited. This company has always been closely related to the development of mining and forestry in the North. In the late thirties, timber cruising and fire patrolling made up a large part of their business. Today, the supplying of missions and government establishments on the shores of James and Hudson Bay which look after the welfare of the Eskimo and Indian population is one of the most important aspects of their business. Much of their time is also spent on transporting freight for the Hudson's Bay Company. Many special services are also provided.



Courtesy -- Austin Airways Limited.

Winter airstrip on frozen muskeg, Moosonee

Austin Airways has bases at Sudbury, Timmins, South Porcupine, Geraldton, Nakina, Moose Factory and Moosonee. Moosonee is headquarters for charter flights and special vacation trips into the Arctic. The company's longest route is north from Moosonee to Sugluk with stops at Fort George, Great Whale, Port Harrison and Povungnetuk. This is a twice-weekly route, supplemented by monthly flights beyond that point to Cape Dorset on Baffin Island. Other flights are from Moosonee to Albany and Attawapiskat; to Winisk and Fort Severn; to Rupert House, Eastmain and Paint Hills; and to Timmins. From Nakina the company serves Fort Hope, Ogoki Post and Lansdowne House.

In all, 17 commercial air carriers operate into or within Northeastern Ontario. Air Canada provides the only scheduled service, with flights to North Bay, Earlton, Timmins, Sudbury and Sault Ste. Marie. Class #2 service i.e. flights between specific points with some degree of regularity, is provided by Austin Airways. Class #3 service, from a designated base to serve a defined area or specific points, is provided by Austin Airways, Georgian Bay Airways Limited and Lakeland Airways Limited. Georgian Bay Airways is based in New Liskeard and serves camps to the south and west. Lakeland of Timagami provides air service to camps located within an area of about 25 miles to the west of their base. Fifteen air

TRANSPORTATION IN THE NORTHEASTERN ONTARIO REGION 1965

LEGEND

RAILWAYS—

ROADS:

KING'S HIGHWAYS—

SECONDARY HIGHWAYS—

UNDER CONSTRUCTION—

AIRPORTS:

LAND BASED—

WATER OR WATER & ICE BASED—

STEAMSHIP ROUTES—

20 0 20 40 60
SCALE IN MILES

PREPARED BY THE
APPLIED ECONOMICS BRANCH
OFFICE OF THE CHIEF ECONOMIST
ONTARIO DEPARTMENT OF ECONOMICS AND DEVELOPMENT

QUEBEC



carriers provide charter service and twelve offer special services such as flying training, recreational flying, aerial photography, aerial pest control, aerial patrol and inspection e.g. timber cruising, reconnaissance, power or pipe line patrol, and geophysical survey. The Ontario Department of Lands and Forests Air Service operates out of Sault Ste. Marie.

Two-thirds of the 60 landing areas in Northeastern Ontario are either water or water and ice. These cannot be used in all seasons of the year e.g. fall freeze-up and spring break-up. There are, however, 18 land bases and one heliport (Timmins). Airports at Earlton, Gore Bay, Hearst (emergency only), Kapuskasing, North Bay, Ramore, Sault Ste. Marie and Timmins are operated by the Department of Transport; those at Little Current and Sudbury, by their respective municipalities; and the remainder by the R.C.A.F., private individuals or companies.

Construction of additional year-round landing facilities suitable for wheeled planes has been suggested to make air service more effective. It has been estimated in this connection that wheeled aircraft have a comparative cost advantage of up to 1 in 3 over planes fitted with skis or floats.

The construction of regularly operational airports would bring to remote areas the advantages of year-round schedules, the economy of wheeled aircraft and the possible introduction of additional air services to feed existing or future services in more populated areas.

It is understood, of course, that before expensive new air facilities and services are established, the possibility of improving surface transportation would be thoroughly investigated. New roads, in particular, where feasible, have the advantage of not only providing means of transportation between two points, but also of opening up all the area in between, facilitating access to and development of natural resources and making possible the establishment of a profitable tourist industry.

Communications



Courtesy — Northern Telephone Limited.

Main distribution frame, dial exchange, Timmins

Without an efficient system of communication, no area can effectively develop its economy. And in areas with little or no ground transportation facilities, the ability to communicate with the outside world becomes vital—providing a sense of security to people otherwise isolated for weeks at a time, especially during periods of break-up and freeze-up when neither aircraft nor ships can navigate. In more settled districts, the development of industry and commerce, the efficient operation of transportation systems and the general carrying on of business and social activities are dependent on an adequate communications system. This is confirmed by the phenomenal growth in demand for various forms of communications services in recent years.

TELECOMMUNICATIONS

One of the oldest providers of communication facilities in Northeastern Ontario is Northern Telephone Limited, chartered in 1905 in New Liskeard as the Temiskaming Telephone Company. By 1907, Cobalt and Haileybury were being served, in addition to New Liskeard. Then, as farming communities and mining camps spread to the north, so did the company, both in Ontario and Northwestern Quebec. The company has continued to expand its area

of operations and now provides telecommunication services to some 81,000 customers throughout a vast area stretching from Chibougamau, Quebec to the Manitoba border and north from Cobalt, Sault Ste. Marie and Atikokan to Hudson Bay. Many of Ontario's richest mining camps are in this area. In Northeastern Ontario alone, the company serves approximately 41,000 telephones while its wholly owned subsidiary, Algoma Central Telephone Company Limited, serves an additional 2,000. This subsidiary, purchased in 1957, serves the town of Wawa and the area along the Algoma Central Railway from Sault Ste. Marie to Hearst. The Wawa exchange serves the iron mines of Algoma Ore Properties, subsidiary of The Algoma Steel Corporation.

For many years the company has served far northern points such as Winisk, Great Whale, Big Trout Lake, Fort Severn and Lansdowne House by means of radio links connected to company exchanges. Now Very High Frequency radio systems and dial telephones are being installed for the convenience of establishments in fringe areas. This system provides for simultaneous two-way conversations instead of the old "press-to-talk" operation, within a range of 20 to 30 miles from base. In 1965, V.H.F. Radio camp telephone base terminals were established at Oba, Timmins, Gowganda, Nakina, Searchmont, Wawa and Cobalt. Customers at mining development sites, tourist operators and lumber operators dial directly into the base station's main exchange.

While the company maintains long distance lines connecting some of its central office exchanges, other long distance connections are made through the Ontario Northland Railway communication system, its own subsidiaries and other connecting companies. In all cases, agreements cover calls both within and without the territory served by the company.

Late in 1964, Algoma Central Telephone Ltd. installed a microwave system between Montreal River and Wawa to carry a pick-up of CJIC-TV, Sault Ste. Marie. This television channel is then distributed in Wawa by Rediffusion Inc., CATV System. In 1965, exchanges in Kirkland Lake, Earlton and Connaught were converted to dial. Some 90 per cent of all the company's telephones in Northeastern Ontario are now dial operated. Dial conversion at Ansonville is planned for 1966.

The Ontario Northland Transportation Commission through Ontario Northland Communications also operates long distance telephone, telegraph and various other communication media in the Northeastern Ontario Region. Commercial communication services have been provided since 1905. Some 950 telephones in the Region are now being served by ONC—in Moosonee, Moose Factory, Timagami, the Marten River area and the rural area north and west of Cochrane. In addition, service is provided in the Rollet, Quebec area, south of Arnprior.

A microwave relay system stretching 440 miles from North Bay to James Bay, with lateral branches to Elk Lake and Kapuskasing, was completed as part of a multi-million dollar communications expansion program. Additional channels are

NORTHEASTERN ONTARIO REGION

being added as required. New buildings to house facilities and equipment were built at North Bay, Kirkland Lake, Moosonee and Moose Factory while additions were made to buildings at Cochrane and New Liskeard. Relay towers are spaced at line of sight intervals of approximately 25 miles.

A high frequency radio system was installed at Moosonee to provide long distance telephone service to communities on the coasts of James and Hudson Bay. The installation here is completely automatic and is operated by the Cochrane Long Distance Office, 186 miles to the south. Some eight centres in Ontario and four in Quebec are served by radio telephone from Moosonee. These include Attawapiskat, Big Trout Lake, Fort Albany, Fort Severn, Lansdowne House, Wingamon (Round Lake), Winisk and Wunnumin Lake and Fort George, Great White River, Paint Hills and Rupert House. The local telephone service in these communities is provided by the Bell Telephone Company. The Ontario Northland owns and operates the long distance radio terminals at Fort Albany, Attawapiskat and Winisk. Missionaries operate many of the hinterland exchanges and most of the subscribers are Cree Indians. Calling these distant outposts is not much more expensive than calling anywhere else in Canada—there is an extra charge of 60 cents for the first three minutes for the radio service but otherwise the costs are equal. In 1964, the base station at Moosonee was conditioned to communicate with two Hudson's Bay Company vessels which operate on James and Hudson Bay. The Ontario Northland also provides long distance service within the Northeastern Ontario Region, to some of the communities served by Northern Telephone Limited.

Improvement and expansion is being carried out in all phases of operation in the communications system to make available to the north country all the advances of modern technology.

The Bell Telephone Company of Canada also serves a large number of centres in Northeastern Ontario. While these communities are primarily on or close to Highway No. 17, from Mattawa to Sault Ste. Marie, other customers are found in Chapleau, Foley yet, Renabie, Horne Payne and White River.

The Bell Telephone Company also provides service in centres much farther north, beyond 70° north latitude, on Baffin and Devon Island. Six new exchanges will be established in the far north this summer.

At the end of 1965, the Bell Telephone Company served 117,200 telephones in Northeastern Ontario, an increase of nearly 4,800 over the previous year. Sudbury and Copper Cliff together accounted for 33,845, Sault Ste. Marie for 28,823 and North Bay for 18,896.

Several small telephone systems also operate in the Region. Eleven of these are in Manitoulin District, three in Algoma and one in Cochrane. The companies range in size from approximately 20 telephones to 1,700 and the total number

TELEPHONE SYSTEMS IN THE NORTHEASTERN ONTARIO REGION

1965

LEGEND

TELEPHONE EXCHANGES:

THE BELL TELEPHONE COMPANY OF CANADA—
NORTHERN TELEPHONE LIMITED (INCLUDING SUBSIDIARIES)

TELEPHONE—

RADIO/TELEPHONE—

OTHER PRIVATE SYSTEMS—

ONTARIO NORTHLAND TRANSPORTATION COMMISSION:
TELEPHONE—

RADIO/TELEPHONE—

SCALE IN MILES
20 0 20 40 60 80

PREPARED BY THE
APPLIED ECONOMICS BRANCH
OFFICE OF THE CHIEF ECONOMIST
ONTARIO DEPARTMENT OF ECONOMICS AND DEVELOPMENT

QUEBEC



served by all these companies is about 4,000. The number of systems has declined steadily in recent years as the least efficient cease to operate and others are bought out by larger establishments. In addition, certain companies other than incorporated telephone companies operate their own systems, e.g. the Abitibi Paper Company at Iroquois Falls which serves some 600 subscribers. In the whole of the Region, more than 165,000 telephones are in use: Some 53,800 in Sudbury District, 41,100 in Algoma, 27,200 in Cochrane, 25,500 in Nipissing, 15,200 in Timiskaming and 2,600 in Manitoulin.

RADIO AND TELEVISION

Six television broadcasting stations are located in Northeastern Ontario. Four of these, CBFOT and CFCL-TV Timmins, CBFST Sturgeon Falls and CKSO-TV Sudbury, operate satellite stations in other communities to rebroadcast their programs. The other two stations are located in North Bay and Sault Ste. Marie. Two French-language stations, CBFOT Timmins and CBFST Sturgeon Falls, with their respective satellites, are owned and operated by the Canadian Broadcasting Corporation.

It is estimated that 95 per cent of all households in the Region have at least one television receiver. Manitoulin District, with 88 per cent, has the lowest proportion and Sudbury, with 97 per cent, has the highest. In the Province as a whole, 96 per cent of all households are estimated to have at least one receiver.

Fifteen radio stations—11 amplitude modulation (AM) and 4 frequency modulation (FM)—are located in six centres in the Region—Timmins, Kirkland Lake, Sudbury, Blind River, Sault Ste. Marie and Wawa. In addition, 16 low power relay transmitters are operated by the CBC to extend the area of broadcast coverage.

NEWSPAPERS AND PERIODICALS

Five daily and 11 weekly newspapers provide coverage of news of special interest to local residents as well as news of national and world-wide importance. In addition, newspapers from outside the Region, e.g. Toronto and Montreal, are available in the larger centres.

The North Bay Nugget, Sudbury Star, Sault Star, Timmins Press and Kirkland Lake Northern News are published daily. Weekly papers are issued in Cochrane, Elliot Lake, Espanola, Gore Bay, Kapuskasing, Little Current, New Liskeard, Sudbury and Thessalon. Two French-language weeklies—L'Ami du Peuple and L'Information—and one English weekly, are published in Sudbury. A Finnish-language religious periodical is published monthly in Sudbury.

POST OFFICES

Post offices are located in all incorporated centres in Northeastern Ontario, and in many unincorporated ones. Revenue from all post offices in the Region totalled \$2.6 million in the year ending March 31, 1963. The largest offices are in Sudbury, Sault Ste. Marie, North Bay and Timmins.

Tourism

Tourism as we know it today is largely the product of modern developments in transportation, the advent of the shorter work week, higher incomes and holidays with pay, and the spread of urbanization.

Travelling by car along the open highway has become the most popular way of taking a vacation. In Northeastern Ontario there are now some 11,300 miles of roads and highways, nearly 2,000 of which are King's Highways and 1,250 Secondary Highways. The completion of the Trans-Canada Highway through the Region in 1960 and the opening of the International Bridge at Sault Ste. Marie two years later greatly stimulated motor travel in the Region, especially by opening up the "circle route" around the world's largest body of fresh water. This route runs through Northeastern and Northwestern Ontario to the north of Lake Superior and through the States of Minnesota, Wisconsin and Michigan to the south. It is within easy driving distance of several other States and the remainder of the Province and is connected by highways and scenic routes with many other parts of the United States and Canada.

The majority of travellers on this route start their tour at Sault Ste. Marie, the only link between the two countries along 600 miles of international waterway. It was nearly 350 years ago, in 1622, that the first white man entered this area. That year Etiènne Brûlé, having travelled through hundreds of miles of wilderness, came upon an Ojibway settlement on the banks of the rapids. He was soon followed by Jean Nicole and the Jesuits. In 1668, the site was named Mission du Sault Ste. Marie and here, in 1671, formal possession of all the Great Lakes area was taken in the name of Louis XIV of France. For many years before the British gained control of the area in 1762, Sault Ste. Marie was the western "jumping off point" for French fur traders and missionaries. It was later used by the Northwest Company based in Montreal. To facilitate the transporting of heavily laden canoes around the rapids, the Northwest Company built a primitive canal and lock in 1797. The canal, 3,000 feet long, ended in a lock 38 feet long with a lift of 9 feet. This ancient lock has been restored and may now be seen by interested visitors. They may also see a huge 1,200-foot long, 110-foot wide and 32-foot deep lock under construction on the American side of the rapids. Four other locks, considerably smaller, are now being used to circumvent the 21-foot drop in lake levels between Lake Superior and Lake Huron. Three of these are on the American and one on the Canadian side. Sault Ste. Marie is also the home of The Algoma Steel Corporation, Canada's second largest steel producer and a number of other industries.

After visiting Sault Ste. Marie, the traveller starts north on Highway 17. About 30 miles outside the City the highway approaches Batchawana Bay and for some miles runs parallel to the water, through forests and over rivers inhabited by moose, deer and bear, trout, muskellunge and pike. All along the highway the scenery is magnificent, with towering rocky hills and deep gorges. A small Provincial park located at Pancake Bay has camp and trailer sites, picnic facilities, a beach and

good fishing. A few miles farther north, just past the spot where the Montreal River empties into Lake Superior, you enter beautiful Lake Superior Provincial Park. It comprises some 521 square miles of forests, rocks, lakes and streams, beaches and excellent camping grounds. One of the most striking features of this park is the canyon through which the Agawa River rushes to the lake. The adventurous traveller who climbs down the rocks near the mouth of the river will find Indian pictographs on the cliff face. These faded markings, believed to have been made with a mixture of iron ore and animal oils are among 60 such finds in Northern Ontario.

Just north of this park a secondary highway branches off to the right, to Wawa and Hawk Junction. At Wawa, which is the Indian word for wild goose, there is a huge statue of a Canada goose, built by the residents to celebrate the closing of the "Gap" in the Trans-Canada Highway in 1960, and their connection by road with the rest of the Province. Nearby are located the George W. MacLeod and Sir James iron mines, operated by the Algoma Ore Properties Division of The Algoma Steel Corporation. The sinter operations of Algoma Ore Properties are largely responsible for the continuing prosperity of the community. Hawk Junction is at the end of the road, on the Algoma Central Railway. At one time a mission was located at Michipicoten Harbour and at another, an important Hudson Bay Company Post.

From this point, the highway wanders through forest and rolling hills to White River and so out of the Region. Throughout its length from Sault Ste. Marie north the road passes through some of the wildest and most magnificent terrain in the country—dense forests, turbulent rivers roaring through deep canyons, ridge after ridge of spruce covered hills—a sight never to be forgotten.

In order to reach the starting point of this circle tour, the visitor may travel along Highway 17 from the Ottawa Valley through Mattawa or from Central and Western Ontario up Highway 11 to North Bay or up Highway 69 to Sudbury and then west along Highway 17. It was by way of the Ottawa River, Lake Nipissing, the French River and the North Channel that the fur traders moved west two hundred years ago. Now one travels through a land of mines, smelters, pulp and paper mills and factories, a land, too, of homes and stores and offices. The new Laurentian University campus at Sudbury is also well worth a visit. Of interest, as well, is the Canadian Centennial Numismatic Park being developed at Sudbury. The first two coins in the collection are of the Big Nickel, a stainless steel, 30-foot high replica of the Canadian 1951 commemorative five-cent piece, and the Fantasy Copper, a 10-foot replica of the 1965 Canadian cent. Stainless steel replicas of the 1964 Kennedy half dollar and the Sir Winston Churchill five-shilling piece will also be constructed.

Several roads branch off from Highway 17, leading the visitor to new sights and sounds. Highway 68, for example, winds south from Espanola, to Little Current, Manitowaning and South Baymouth on the beautiful island of Manitoulin.

NORTHEASTERN ONTARIO REGION



Courtesy — Ontario Department of Tourism and Information.

Cruiser leaving Little Current, Manitoulin Island

This is one of Ontario's most picturesque holiday areas, an ideal spot for the nature lover and the photographer. There are more than 100 inland lakes, hundreds of off-shore islands, both big and small, in the Bay of Islands and McGregor Bay, for example, good dockage facilities for craft of all sizes, beautiful waterfalls, many lookout points from which to view the surrounding countryside, several scenic hiking trails and many points of historical interest. Museums in several centres contain early Manitoulin artifacts. The oldest church on the Island, built by the Indians over 100 years ago, is located in Manitowaning. Some 2,300 Indians live on reserves on the Island. The largest of these, Manitoulin Island Indian Reserve, is the only unceded Indian Reserve in North America. Every year Indian tribes from all across North America participate in a Powwow held at Wikwemikong on the Reserve. Ceremonies include traditional dances and songs performed in authentic costumes. A rock memorial and plaque have been erected on Highway 68 at Birch Island in honour of Franklin Delano Roosevelt who vacationed in the area. Manitoulin Island can also be reached by ferry, from Tobermory on the Bruce Peninsula and from Blind River on Highway 17.



Courtesy — Ontario Department of Tourism and Information.

Mining and Nuclear Museum, Elliot Lake

Farther west on Highway 17, Highway 108 runs north to Elliot Lake with its uranium mines, its Mining and Nuclear Museum and a nearby provincial park while north from Thessalon, Highway 129 runs through miles of forest land to Chapleau. A few miles off the highway is Aubrey Falls, a sight well worth the walk needed to reach it. At Chapleau one can take Highway 101 east through Timmins and the rich Porcupine gold producing area to Matheson on Highway 11. Slightly north of Timmins is the copper-lead-silver-zinc find of the Texas Gulf Sulphur Company, which is now being developed. To the west of Chapleau, Highway 101 is being extended to Wawa. The entire road will be in service by 1967.

About 30 miles south of Sault Ste. Marie, in the North Channel, is St. Joseph Island. Here are to be found the remains of a British fort built late in the 18th Century. Excavation of the site has produced many interesting artifacts. The island can be reached only by ferry.

NORTHEASTERN ONTARIO REGION

Returning to North Bay on lovely Lake Nipissing, the visitor traverses ground first seen by a European in 1610. In order to explore the northern part of the Region, he now turns to Highway 11, the "Main Street of Ontario". This road runs north through the Marten River vacationland where all species of game fish are to be found and the wilderness abounds in moose, deer, bear and game birds, to the mining areas of Timagami (iron) and Cobalt (silver and cobalt). Suddenly the road breaks through the rocks and spread out before the traveller are the farm lands of New Liskeard. Between Haileybury and New Liskeard a branch of the highway runs close to lovely lake Timiskaming where one may fish, boat or swim. North again, the road passes near a big new iron ore mine and pelletizing plant at Dane, the fabulous gold producing area of Kirkland Lake and the pulp and paper centre of Iroquois Falls. At Cochrane, the junction of the C.N.R. and O.N.R., the road turns westward through Smooth Rock Falls, Kapuskasing and Hearst, all of which are primarily orientated towards forestry and its products. Two large pulp and paper mills are located in Kapuskasing and one in Smooth Rock Falls.

The Region is a virtual paradise for the outdoorsman. Hunting and fishing are excellent in almost all parts of the area—walleye, pike, trout, muskellunge and bass, deer, bear, moose and game birds. Although other outdoor activities such as boating, camping and swimming are carried on, it is still the hunting and fishing which first attract then bring back the majority of visitors to Northeastern Ontario. Some of the best areas, however, are inaccessible except by air. To remedy this more than a dozen air lines provide charter service into the interior.

Railway excursions are available into two fascinating areas not accessible by road. These are the Agawa Canyon and Moosonee. "Spend a day amid nature untamed in Agawa Canyon", says the Algoma Central Railway which offers special



Courtesy — Ontario Department of Tourism and Information.

Dock at tourist resort near Oba

excursions to the canyon through country virtually untouched by man—rugged, beautiful, spectacular—a blend of forest, stream and mountain. It is an ideal place to fish, take photographs, explore or just relax. The excursion train leaves Sault Ste. Marie early every morning except Sunday during the summer and autumn seasons and returns the same evening.

An excursion to a far different type of country is offered by the Ontario Northland Railway, aboard its Polar Bear Express. Special trains leave Cochrane every Sunday morning during the summer and run to Moosonee, stopping along the way to allow photographers to take pictures. Six hours are available to visit the community, take a boat trip to James Bay or across to Moose Factory Island and be back in Cochrane the same evening.

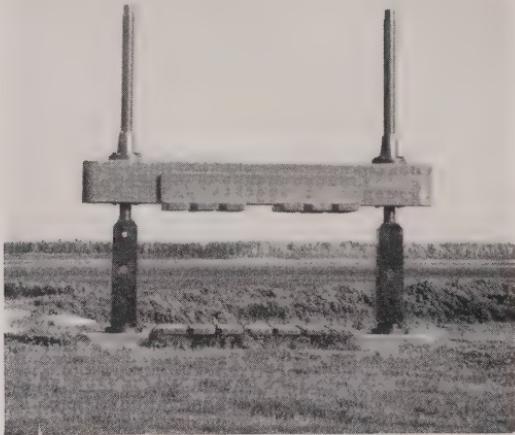


Courtesy — Ontario Northland Railway.

Log Lodge, Moosonee

But the area well merits a longer stay. Almost 300 years ago, in 1673, the Hudson's Bay Company established a post at Moose Factory. This post was antedated only by the one built at Rupert's House in the charter year of 1670. A modern store is located there now, a Staff House built about 1810 and a blacksmith shop, a powder magazine and a graveyard. Not far away is a little Anglican Church with its moose hide altar and prayer books in the Cree language. There is also an Indian residential school and a 200-bed Federal hospital, established primarily to care for Indians and Eskimos from the north. Many of these are being treated for tuberculosis. Much of the Island is Indian Reserve.

The country around Moosonee, "the end of steel", is still primitive and a mile in any direction brings the visitor into virgin territory. The Arctic tide is seen as



Courtesy — Ontario Northland Railway.

Ancient fur press, Moose Factory

far up the river as Moosonee. A boat trip can be taken down the river to Ship Sands Island at the river's mouth. Here the river widens to 10 miles and the shore gradually flattens into the salt marshes where, in October, the blue geese congregate in tens of thousands.

There are several goose hunting camps on James Bay but one of the best known is the O.N.R. Camp at Hannah Bay which lies about 45 miles east of Moosonee. Indian guides construct blinds, make decoys and retrieve the geese. They are expert callers and bring the geese well within range. All shooting is done on the wing. The railway offers special package plans, both for a regular shooting period and for week-end shoots.

One of the most important developments in tourism in recent years has been the growing popularity of camping. While the ready availability of good quality equipment has encouraged this trend, the spread of urbanization and the consequent desire of many to return to a relatively simple way of life, if only for a short time, is probably the main reason behind this development. The presence of provincial parks has, no doubt, also been an important factor. In Northeastern Ontario there are 23 provincial parks with a total area of nearly 2.5 million acres, approximately $\frac{2}{3}$ of the Provincial total. The parks vary greatly in size. By far the largest and also the oldest and most popular is Algonquin Park.

This park with its nearly 1.9 million acres, not only has a number of separate camp and picnic grounds but a large area of land reserved from development to maintain its natural beauty. Unsurpassed canoe trips into many interconnecting chains of waterways may be taken by anyone who really wishes to get away from

the busy life of the city. A Naturalist Service has been established to acquaint the less venturesome with the geology, flora, fauna and human history of the park. It is felt that people appreciate most that which they understand best. A museum which features live displays of fish, amphibians and reptiles as well as mounted specimens of animals and Indian artifacts, labelled nature trails, conducted trips and illustrated talks are all part of the program. An outdoor pioneer logging exhibit near the east gate shows reproductions of the equipment used by the loggers in the historic squared-timber era. In 1965 approximately 506,000 people visited the park, nearly 36,000 more than in 1964. The number of campers, however, declined slightly to less than 74,000. Highway 60 runs through the southwestern corner of the park connecting with Highway 11 at Huntsville on the west and with Highway 17 just north of Renfrew on the east.

PROVINCIAL PARKS IN OPERATION, NORTHEASTERN ONTARIO REGION, 1965

	<u>Area (acres)</u>	<u>Number of Developed Campsites</u>	<u>Campers In 1965</u>	<u>Visitors in 1965</u>
Cochrane				
Charles Island.....	172	—	—	—
Greenwater.....	10,560	30	1,390	13,205
Kettle Lakes.....	2,304	95	3,980	42,958
Nagagamisis.....	11,878	80	2,169	10,750
Remi Lake.....	980	70	3,483	31,584
Nipissing				
Algonquin.....	1,862,144	1,315	73,575	505,901
Antoine.....	23	29	920	16,206
Finlayson Point.....	75	114	8,263	39,981
Marten River.....	1,039	279	11,199	132,316
Samuel de Champlain.....	2,180	224	7,490	56,890
Timiskaming				
Esker Lakes.....	7,680	136	3,623	14,314
Kap-Kig-Iwan.....	759	64	2,685	18,194
Manitoulin				
Killarney.....	90,000	25	2,887	17,641
Sudbury				
Chutes.....	245	68	12,791	100,375
Fairbank.....	85	132	7,786	33,269
Five Mile Lake.....	1,010	87	2,174	9,176
Ivanhoe Lake.....	3,010	143	3,383	13,637
Windy Lake.....	293	76	2,956	112,352
Algoma				
Batchawana.....	33	—	—	19,245
Lake Superior.....	333,632	316	31,295	113,353
Mississagi.....	95,360	38	2,494	7,561
Obatanga.....	34,240	84	11,968	16,229
Pancake Bay.....	710	288	28,764	69,641
Total, Ontario 89 Parks.....	3,742,160	15,427	902,472	8,875,668

NORTHEASTERN ONTARIO REGION

The smallest of the provincial parks is Antoine, 23 acres in area, located 4 miles north of Mattawa on the Ottawa River. Some 17 miles west of Mattawa, on the Mattawa River and Highway 17, is Samuel de Champlain Park. Nearly 57,000 visitors and about 7,500 campers used the park in 1965. A series of provincial parks has been established along Highway 11, north of North Bay. These include Marten River, 38 miles north of North Bay; Finlayson Point, just south of Timagami; Kap-Kig-Iwan, 1½ miles south of Englehart; Esker Lakes, east of Kirkland Lake; Kettle Lakes, on Highway 67, 12 miles west of Highway 11; Greenwater, 18 miles northwest of Cochrane; Remi Lake, 14 miles east of Kapuskasing; and Nagagamisis, on Highway 631, 40 miles south and west of Hearst.

Another system of parks may be reached by following Highway 17 west from Sudbury. Just west of the city and 30 miles north on Highway 544 is Windy Lake Park, while about 15 miles west on Highway 17 is Fairbank Park. Chutes Provincial Park is one mile north of Massey. Batchawana Park, 43 miles north of Sault Ste. Marie, is followed by Pancake Bay, 5 miles further north, Lake Superior, nearly 337,000 acres on the east shore of the lake, and Obatanga, 23 miles east of White River.

Other parks include Killarney, approximately 90,000 acres, opened in 1964 on the mainland portion of Manitoulin District; Mississagi, 12 miles north of Elliot Lake on Highway 639; Five Mile Lake on Highway 129, 25 miles south of Chapleau; Ivanhoe Lake, 8 miles south of Foleyet; and Charles Island, 172 acres on an island in the Moose River near Moosonee.

One new park is being developed in the Region but will not be opened to the public for some time. This is Sand Shoals, 18,000 acres in the Chapleau area. Expansion of Batchawana Park, north of Sault Ste. Marie, is planned. Canoe routes similar to those in Algonquin Park were established in both Killarney and Lake Superior provincial parks during 1965.

A number of Wilderness Areas have also been established by the Province in Northeastern Ontario. These areas are open to the public but are left as much in a state of nature as possible. There are four in the District of Cochrane. Old Fort Albany, 11 acres at the mouth of the Abitibi River, is an early Hudson's Bay post and is said to be one of the oldest places of residence in Ontario. Abitibi Narrows which comprises 9.75 acres in the Township of Rand is also the site of an old Hudson's Bay Company trading post. It is, as well, the site of an old Indian burial ground. Fairy Point—640 acres in the Township of Missinaibi is the site of an old Indian battle ground and has a large number of Indian paintings or pictographs. Whitefish Falls, 266 acres also in the Township of Missinaibi, is considered to be an area of aesthetic and recreational value. Four wilderness areas are located in Algoma District. Old Brunswick House, 51 acres in the Township of Kildare, is the site of a Hudson's Bay Company trading post. At the Montreal River wilderness area—108 acres (Township 29, Range XIV)—is a stand of red pine which is

valuable for a seed orchard. It is also the site of an old Lake Superior beach said to be over 35,000 years old. The Hilton Township area, 97 acres in the Township of Hilton, is recommended from an educational standpoint to demonstrate tree farm methods to members of 4-H clubs. New Brunswick House Post—137 acres in the Township of Cromlech—is the site of a Hudson Bay Company post. Crater Lakes Wilderness Area is located in the Township of Killarney, District of Manitoulin. Its 550 acres are reserved as a scenic and historic site. Eighteen Mile Island—482 acres in the Township of Mason, District of Sudbury—is of silvicultural interest. It provides an opportunity to observe the undisturbed succession of existing forest types.

In addition to the trend towards camping holidays, there is a growing tendency to take vacations at any time of the year. More and more Northern Ontario resorts, originally built for summer operation, are open during the winter season. Winter carnivals are held annually in a number of communities, including Timagami, Kirkland Lake, Cochrane and Sault Ste. Marie. Skiing is becoming more popular and facilities are being improved. They are still, however, used largely by local residents.

Autumn is also attracting more visitors. The artist, the camera fan and the nature lover alike can enjoy the glorious fall colours and crisp sunny weather. Hundreds of fishermen, of course, have long frequented this Region both in spring and fall.

Next to transportation, the most important requirement of the tourist industry is accommodation. To a large extent, changes in the pattern of travel determine changes in the type of accommodation offered. The growing importance of motor travel has led to a spectacular growth in motels, not only in number but in size and amenities offered. Many now offer resort facilities such as swimming pools and golf, high grade restaurants and evening entertainment. There are approximately 280 licensed tourist establishments in Northeastern Ontario, 200 motels and 890 other types of establishments, e.g. resorts, cabins, outfitters' camps, etc. This represents accommodation for over 46,000 persons. The Districts of Algoma, Nipissing and Sudbury together account for about two-third of the total accommodation. While the total is fairly evenly distributed among them, Algoma has many more motels than any of the other five districts.

The tourist industry is important not only to the local tourist area, but to the Region, the Province and the country as a whole. The impact of this industry is often underestimated partly because it comprises a complex of diversified industries and partly because no exact statistical data on tourist expenditures are available. It might be pointed out that the Canadian tourist industry has a substantial impact on the balance of international payments, being this country's third largest earner of foreign exchange, ranking after wheat and newsprint. One advantage of the tourist industry to the economy of an area is that it is frequently located far from large urban centres, in areas where no other industries are likely to be established.

As a rule, food and lodging account for about half of total tourist spending while the other half is spent on travel, shopping, and, to a lesser extent, entertainment. Such spending has a large local impact, for the sectors of industry most affected have a high labour content. Food means income for waiters, cooks, retailers, wholesalers, packers, farmers, truck drivers; lodging implies salaries for staff, purchase of furniture, etc., payment of electricity, fuel, insurance, laundries, local taxes and construction.

Trade and Services

Many of the foods and beverages consumed in Northeastern Ontario are shipped in from Southern Ontario, other parts of Canada and the United States. Large quantities of bituminous coal are also imported, largely for use in the iron and steel and other base metal industries.

On the other hand, vast tonnages of newsprint, nickel and iron as well as important quantities of pulp, various types of paper products, lumber, plywoods and veneers, gold, silver, platinum metals, zinc, etc., are exported to other parts of the country and other countries in the world. By truck, train and ship, the products of the Region are transported to the markets of the world.

North Bay has for many years been the chief distribution centre for much of Northern Ontario, largely because of its strategic location and excellent transportation services. Secondary centres have, of course, grown up to serve specific parts of the North, e.g., Sudbury and Sault Ste. Marie. Recently, because of its road and rail connections, Kirkland Lake has begun to develop as a warehousing and distribution centre for Northwestern Quebec.

Within the Region itself, a growing population, rising incomes and increased tourist traffic contributed to a 76 per cent increase in retail sales between 1951 and 1961. The largest proportionate increase took place in Algoma District, 141 per cent, while the largest dollar increase occurred in Sudbury District, \$72 million. Sudbury District accounts for about one-third of all retail sales in the Region and Algoma for one-quarter.

RETAIL TRADE BY DISTRICTS, NORTHEASTERN ONTARIO REGION, 1961

	Stores		Sales	
	No.	% Change 1961/1951	\$000's	% Change 1961/1951
A—Clay Belt				
Cochrane.....	790	0.9	79,634.0	45.2
Nipissing.....	549	19.1	65,419.5	70.9
Timiskaming.....	521	-6.6	40,518.3	19.8
Sub-total.....	1,860	3.2	185,571.8	46.2
B—Nickel Range				
Manitoulin.....	133	1.5	7,908.9	47.5
Sudbury.....	1,071	24.2	152,566.4	89.8
Sub-total.....	1,204	21.2	160,475.3	87.2
C—Sault				
Algoma.....	848	41.8	108,934.4	140.7
Total, Northeastern Ontario Region.....	3,912	15.3	454,981.5	76.4
Total, Ontario.....	52,157	15.7	6,206,684.5	69.3

Average retail sales per person stood at \$900 in the Region in 1961, compared with \$995 in the Province. The average was highest in Algoma, \$978, followed by Nipissing (\$927), Sudbury (\$920), Cochrane (\$832), Timiskaming (\$795) and

NORTHEASTERN ONTARIO REGION

Manitoulin (\$708). It becomes apparent after considering per capita sales figures for all communities of 2,000 population and over, that certain centres have come to act as retail outlets for a large surrounding area. Kapuskasing, for example, showed per capita sales of \$2,104, the highest in the Region, while Hearst reported \$1,526, Cochrane \$1,348 and Timmins \$1,054. In Nipissing District, North Bay with per capita sales of \$1,668 and Sturgeon Falls \$1,306 are the main shopping centres. New Liskeard (Timiskaming) with per capita sales of \$1,760 must attract customers from far afield as Cobalt showed only \$917 and Haileybury \$857 per person sales. Sudbury (\$1,402) and Espanola (\$1,212) appear to be the main shopping centres in Sudbury District—Lively and Coniston averaged around \$300 and Levack, Copper Cliff, Capreol and Chelmsford ranged between \$500 and \$830 per person. Per capita sales in Sault Ste. Marie averaged \$1,615 and in Blind River \$1,473.

The food and the automotive groups of retail stores each account for about 28 per cent of the total trade in the Region and together make up well over half of total dollar sales. The food group has slightly larger sales in Cochrane, Timiskaming and Sudbury, while the automotive group is ahead in Nipissing, Manitoulin and Algoma.

RETAIL TRADE BY BUSINESS GROUP, NORTHEASTERN ONTARIO REGION, 1961

	Sales \$000's	% of Total
Food.....	126,823.3	27.9
General Merchandise.....	69,767.4	15.3
Automotive.....	125,853.0	27.7
Apparel and Accessories.....	33,631.7	7.4
Hardware and Home Furnishings.....	31,646.0	7.0
Other Retail Stores.....	67,260.1	14.8
Total, All Stores.....	454,981.5	100.0

A considerable portion of sales in the larger centres is accounted for by grocery and variety store chains and department stores. Loblaw Grocerterias Co. Limited operates two stores in North Bay, three in Sudbury and two in Sault Ste. Marie. Dominion Stores has four stores in Sudbury, three in Sault Ste. Marie and one each in Cochrane, Kapuskasing, Timmins, South Porcupine, Cobalt, North Bay, Sturgeon Falls, Chapleau and Hanmer. I.G.A. Food Stores are also well represented in the Region and a large new warehouse was recently completed in Sudbury City. The F. W. Woolworth Co. Limited has nine and S. S. Kresge Company Limited, eight stores in the Region. Each company operates stores in all districts except Manitoulin. Simpsons-Sears Limited has nineteen catalogue sales offices in the Region, located in all districts except Manitoulin, and one retail store in Algoma. The T. Eaton Co. Limited operates thirteen catalogue sales offices in the Region, at least one in each district. Branch stores are located in North Bay and Sudbury and a Heavy Goods Store is operated in Timmins.

SERVICES, BY KIND OF BUSINESS GROUP,
NORTHEASTERN ONTARIO REGION, 1961

	No. of Locations	Receipts (\$000's)
Amusement and Recreation.....	164	4,754.9
Business Service.....	65	n.a.
Personal Services.....	777	8,668.7
Repair Services.....	62	n.a.
Undertaking and Funeral Services.....	29	n.a.
Photography.....	23	n.a.
Miscellaneous Services.....	31	n.a.
Hotel, Tourist Camp and Restaurant.....	1,565	50,008.2
Total.....	2,716	73,896.7

n.a. Not available.

S E R V I C E S

The service industry is one of the largest employers in the Region, accounting for some 22 per cent of the total labour force. In 1961, receipts from 2,716 establishments totalled \$73.9 million and payrolls reached \$16.5 million. The group embracing hotels, tourist camps and restaurants accounted for two-thirds of total receipts, some \$50 million. Sudbury and Algoma districts each accounted for approximately one-third of total receipts.

Districts and Municipalities

A—CLAY BELT SUB-REGION

This section of the Northeastern Ontario Region comprises the three districts of Cochrane, Nipissing and Timiskaming. It accounts for nearly two-thirds of the land area and more than two-fifths of the population of the Region. Timmins and North Bay are the largest centres. Mining, forestry and forest-based industries, tourism and the provision of transportation and communication services are the major fields of activity in this economic sub-region.

DISTRICT OF COCHRANE

With a land area of more than 52,200 square miles, the District of Cochrane accounts for one-half of the area of the Region and approximately 15 per cent of that of the Province. It is bounded on the north by James Bay and the Albany River, on the east by the Province of Quebec, on the south by the districts of Timiskaming, Sudbury and Algoma, and on the west by the District of Thunder Bay.

Much of Cochrane is made up of what is known as the Great Clay Belt, an area once submerged beneath the waters of a large glacial lake. Over the centuries, clays, silt and sand were deposited on the rocky lake bottom. The Clay Belt is, in general, an area of low relief. It contains valuable forest resources and is a leading supplier of pulpwood and saw timber. Although it contains large areas of fertile soil, little agriculture is carried on because of the severe climate and poor drainage. North of the Clay Belt, the Hudson Bay Lowlands, a low, flat coastal plain slopes down towards James Bay at about three or four feet per mile. This plain is very poorly drained and contains large areas of muskeg.

The main rivers in the District are the Abitibi, Mattagami, Groundhog, Kapuskasing and Missinaibi. These all join the Moose River and flow into James Bay. The Albany River, which forms the northwestern boundary also flows into the Bay. Excellent hydro sites have been created where these rivers cross the exposed bed-rock of the Shield and drop down into the coastal plain. About a dozen sites have already been developed on the Abitibi, Kapuskasing and Mattagami rivers, one is under construction by Ontario Hydro on the Mattagami River, scheduled for operation in 1966, and others are under consideration.

The first settlement in the District was a Hudson's Bay Company fur trading post at Moose Factory. Built in 1673, it is considered to be the oldest settlement in Ontario. It was not until the beginning of the twentieth century and the discovery of gold, the subsequent building of the railways and the establishment of pulp and paper mills, that the southern part of the District was opened up. In 1932 the Ontario Northland Railway was extended to tidewater, thus providing access by land to the northern areas.

The economy of the Cochrane District is based on its natural resources—its minerals and forests, its lakes and rivers. There are mineralized deposits of gold,

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silver, nickel, copper, lead, zinc, cobalt and asbestos; great stands of timber and pulpwood; hydro-electric power sites, developed and potential; and vast untouched areas to lure the hunter and angler. The short growing season and poor drainage make the development of agriculture difficult. What agriculture does exist, is based mainly on dairying with some mixed farming, beef cattle raising and potato growing. There are five Provincial Parks in the District, ranging in size from 172 acres in Charles Island at the mouth of the Moose River to 11,878 acres in Nagagamisis, just north of Hornepayne. Each year these parks attract many visitors.

The main highway is No. 11, designated the "Northern Route" of the Trans-Canada Highway. It enters the District just south of Ramore, runs in a north-westerly direction through Matheson to Cochrane and then turns more to the west through Smooth Rock Falls, Kapuskasing and Hearst and so into the District of Thunder Bay. Highway No. 101 runs west from the Quebec border, intersecting No. 11 at Matheson, through Timmins and Foleyet to Chapleau in Sudbury District. There it connects with No. 129 which runs south to No. 17, the "Superior Route" of the Trans-Canada Highway. No. 101 is being extended to the west and will be in service to Wawa by 1967.

The Canadian National Railways provide east-west rail transportation while the Ontario Northland provides north-south transit. The Algoma Central Railway runs north from Sault Ste. Marie to Hearst, crossing the trans-continental C.P.R. and C.N.R. lines at Franz and Oba, respectively. Air Canada service is available at Timmins with daily flights to Sudbury and Toronto. Charter flights may be arranged through companies in South Porcupine, Kapuskasing and Cochrane.

Twenty-one per cent of the labour force of the District is engaged in mining, 16 per cent in community, business and personal services, 14 per cent in manufacturing, 12 per cent in trade and 11 per cent in forestry. The remaining 25 per cent are in transportation, communication and other public utilities, construction, agriculture, public administration and defence, finance, etc.

Approximately one-third of the total population which was 95,666 in 1961 and is now estimated at over 100,000, lives in rural areas. In the ten years between 1951 and 1961, population increased by 14 per cent, most of the growth taking place in the second half of that period. During the same ten-year period, rural population grew by only 9 per cent while urban population rose by 17 per cent. Nearly one-half of the population is of French descent and approximately one-third is British. The remaining 20 per cent are Italian, Finnish, Ukrainian, Polish, German, Scandinavian and native Indian.

Average family income in Cochrane was \$5,365 in 1961. This compared with \$5,235 in Nipissing, \$4,910 in Timiskaming, \$3,776 in Manitoulin, \$5,973 in Sudbury and \$6,020 in Algoma. Average for the Region was \$5,634. More than half the families in the District earned between \$3,000 and \$6,000. Retail trade,

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\$79.6 million in 1961, was about one-third higher than in 1951. The food group accounted for nearly \$23 million in sales and the automotive group for \$22 million.

The largest community in the District is the town of *Timmins*. It is located on Highway No. 101 about 40 miles west of Matheson. To the west, No. 101 runs through Foleyet to Chapleau where it connects with No. 129. Timmins, which is a customs port of entry, is approximately 70 miles from Cochrane and 230 miles from North Bay. Rail transportation is provided by the Ontario Northland Railway which connects with the C.N.R. and C.P.R. at North Bay. O.N.R. bus service is also available. Air Canada operates daily flights to Sudbury and Toronto and charter service can be arranged with Austin Airways and Georgian Bay Airways. Nearby Porcupine Lake is used as a base for pontoon-equipped aircraft. Trucking services are provided by half a dozen companies.

Communications facilities include two radio stations—CFCL and CKGB, AM and FM; two television stations—CFCL-TV and CBFOT; and one daily newspaper—The Daily Press. Northern Telephone Limited, with headquarters in New Liskeard, provides telephone service.

In 1961, Timmins had a population of 29,270 while the entire Porcupine area, which includes Schumacher, Porcupine, South Porcupine and parts of the townships of Mountjoy, Tisdale and Whitney in addition to Timmins, had more than 42,000 people. Settlement of this area began with the discovery of gold in 1909. The development of the mines led to the building of the railway and then to the construction of the highway.

The chief economic interest in the area has been, historically, the mining of gold. In recent years, however, with the continuing depletion of gold ores in established mines and a lack of new finds, interest has shifted to base metals. In 1962, for example, McIntyre Porcupine Mines Limited started milling copper ore at the rate of 1,000 tons per day. In 1963, Kam-Kotia Porcupine Mines Limited increased its plant's daily capacity to 1,750 tons of copper ore. In addition, a section was added to the mill to permit the recovery of zinc concentrates from copper circuit tailings. A major copper-lead-silver-zinc discovery was made in Kidd Township early in 1964 by the Texas Gulf Sulphur Company Incorporated. The company is proceeding with a \$60 million program to start open-pit mining and concentrator operations in the fall of 1966. Three primary products—a copper concentrate, a lead concentrate and a zinc concentrate—will be produced. The mine will rank as a major producer on each account and will, in addition, be the world's leading producer of silver and an important producer of such valuable by-products as cadmium. Production at the Canadian Jamieson 400-ton per day concentrator on its copper-zinc property near Timmins began early in 1966. Both underground work and work on a custom mill are being carried out at the Genex Mines copper-gold property. The Canadian Johns-Manville Company Ltd. announced the development of an asbestos mining and milling operation in Reeves Township, southwest of Timmins. Production of asbestos fibre is scheduled to start

in 1968. Explorations in the vicinity are being carried out by a number of mining concerns, both large and small, including the International Nickel Company of Canada Ltd., Hollinger Consolidated Gold Mines Ltd., and McIntyre Porcupine Mines Ltd.

In 1963, the value of gold production in the Porcupine area was \$37.5 million. Among the larger gold producers are McIntyre Porcupine Mines Limited, Dome Mines Limited, Aunor Gold Mines Limited, Hallnor Mines Limited, Pamour Porcupine Mines Ltd., Preston Mines Limited and Broulan Reef Mines Limited.

The other main industry in the area is lumbering. Rudolph-McChesney Lumber Company Limited produces such products as lumber, pallets and wire-bound crates while Feldman Timber Company Limited turns out lumber and sash and doors. Both A. E. Wicks Ltd. and Mountjoy Timber Co. carry out extensive bush operations.

The District Judicial Seat is the town of *Cochrane*, 460 miles north of Toronto on Highway No. 11. It had a population of 4,521 in 1961, an increase of 33 per cent over the previous ten years and of 22 per cent during the five years between 1956 and 1961. Retail sales increased by nearly seven per cent, to \$6.1 million, in the ten-year period. Cochrane is the wholesale distribution centre for the northern sector of the Region.

Rail service is provided by both the C.N.R. and O.N.R., bus service by the O.N.R. and trucking service by several companies including Little, Star and



Courtesy — Cochrane Enterprises Limited.

Debarker and waste burner, Cochrane Enterprises Limited, Cochrane

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Theriault. Cochrane is a customs port of entry. The nearest airport providing Air Canada service is Timmins. Local telephone facilities are provided by the Cochrane Municipal Telephone System and long distance service by the Ontario Northland Transportation Commission. The Cochrane Long Distance Office also operates the automatic high frequency radio system installed in Moosonee to provide service to a number of communities on the coasts of James and Hudson Bays.

The provision of transportation services and the production of forest-based goods are the major economic activities carried on in and around Cochrane. The C.N.R. and O.N.R. each employ 100 or more persons in their operations. John W. Fogg produces lumber and pulpwood, mining timbers, ties and chips. Cochrane Enterprises Limited manufactures poplar, spruce and birch plywood and veneer.

Hearst, a town of some 2,370 people, is the most westerly incorporated community on Highway No. 11 in the Northeastern Ontario Region. About 140 miles west of Cochrane, it is on the northern transcontinental line of the C.N.R. and is the northern terminal of the Algoma Central Railway. Telephone facilities are provided by Northern Telephone Limited. As in all communities along Highway No. 11, natural gas is available through the Northern and Central Gas Co. Ltd.

The economy of the town is based on forest products—rough and dressed lumber, pulpwood and plywood being the main products. The major producers include H. Selin Forest Products Ltd., Newaygo Timber Co. Ltd., Gosselin Bros. and Levesque Plywood Ltd.

The town of *Kapuskasing*, also located on Highway No. 11, is 80 miles west of Cochrane and 320 miles northwest of North Bay. Passenger, freight and express rail service is provided by the C.N.R. while Star Transfer Ltd. is the main trucking company. Although there is a small local airport, the nearest field with Air Canada service is Timmins. Cochrane is the nearest customs port of entry.

On January 1, 1964, the Val Albert Improvement District was annexed to Kapuskasing and the enlarged town now has an estimated population in excess of 13,000. Before annexation, the town recorded an increase in population of more than 46 per cent in the ten years between 1951 and 1961. More than half of this growth took place between 1956 and 1961. Retail sales, which stood at \$14.5 million in 1961, were more than double what they had been ten years earlier.

The pulp and paper industry is the mainstay of the town. The Spruce Falls Power and Paper Company Limited employs approximately 1,400 persons in the production of newsprint and sulphite and another 1,800 in bush operations. Kimberly-Clark Canada Limited manufactures cellulose tissue wadding and has about 75 employees. A \$20 million expansion program is now under way at the Spruce Falls plant, to be completed in 1966. Included is a newsprint machine which will increase capacity by 50,000 net tons per year.

Smooth Rock Falls is the site of the Abitibi Paper Company Limited bleached kraft mill. Some 360 persons are employed in the mill and about 400 in woods operations. The company has operated a mill at this site on the Mattagami River for more than 30 years. The town is on Highway No. 11 and the C.N.R. northern line, about 30 miles west of Cochrane.

The Abitibi Paper Company also operates a plant at *Iroquois Falls*. Some 1,200 persons are employed here in the production of newsprint and wrapper stock. Many of the employees and their families live in the adjacent municipality of *Ansonville*, administrative seat of the Township of Calvert. Both communities are on Highway No. 67 about five miles northeast of No. 11 and 40 miles south of Cochrane. Rail service is provided by the O.N.R. and trucking facilities by Star Transfer Ltd. The nearest airport is Timmins and the nearest customs port of entry is Cochrane.

The town of *Matheson* is located at the junction of Highways No. 11 and 101, about 45 miles south of Cochrane and 40 miles east of Timmins. It is served by the O.N.R. Matheson is area headquarters for the Ontario Provincial Police, the provincial departments of Agriculture, Highways, Lands and Forests and Transport and the Ontario Hydro. It also houses the District Court.

There are excellent clay soils in the area and some agriculture is carried on. The Canadian Johns-Manville Co. Limited is currently operating a test mill to test the asbestos from its mine in Reeves Township and Hedman Mines Limited operates a plant for the production of short asbestos fibres.

Two unorganized communities which differ markedly from the rest of the District are *Moose Factory* and *Moosonee*. Moose Factory, built on an island in the estuary of the Moose River about 12 miles from the open water of James Bay, is said to be the oldest settlement in Ontario. It was founded by the Hudson's Bay Company in 1673 and was antedated only by the post at Rupert's House built in 1670. In 1686, it was captured by a French war party from Montreal but was later reoccupied. Much of the Island is still Indian Reserve.

Moose Factory is area headquarters for both the Indian Affairs Branch of the Department of Citizenship and Immigration and the Northern Health Services of the Federal Department of Health and Welfare. It is also headquarters for the R.C.M.P. There is a large hospital, residential and day schools for Indians, an Anglican church and the Hudson's Bay Company store, staff house and offices. The blacksmith shop, erected in 1740, is one of the oldest buildings in Ontario.

Moosonee was founded in 1932 when the Temiskaming and Northern Ontario Railway (now the Ontario Northland Railway) was completed to tidewater from Cochrane which it had reached in 1908. Moosonee is on the western bank of the estuary, about four miles from Moose Factory. Most of the land is owned by the O.N.R. Access is either by rail, plane (except during freeze-up in the fall and break-up in the spring) or boat. The harbour, however, is relatively shallow and can be used only by small craft.



Courtesy — Ontario Department of Tourism and Information.

Trading ship at Moosonee

A Federal Department of Transport weather station and an R.C.A.F. radar base are located there. It is also area headquarters for the Provincial Department of Lands and Forests.

Of the approximately 1,000 people living in the vicinity of Moosonee, between 800 and 900 are Indians. They are mostly Crees from the west coast of Hudson and James Bays with some from the Quebec side. Most of the Indians live outside the community itself, many on land owned by the O.N.R. Approximately half of the population is Roman Catholic and half is Anglican.

Moosonee takes first place on the continent for goose and duck hunting—blue, snow and Canada—and hunters come hundreds of miles to participate in this sport. The salt marshes of Hannah Bay at the southern end of James Bay afford miles of feeding grounds and excellent rest stops on the trip south, and several goose hunting camps are located there.

In 1962, Ontario Northland Communications built a base station and antennae system at Moosonee as part of its microwave system of communications. This went into operation in June 1963. Twelve small sub-Arctic exchanges, eight in Ontario and four in Quebec, are now linked to the rest of the world through long distance radio-telephone facilities. The local telephone service in these communities is provided by the Bell Telephone Company. Service in Moosonee and Moose Factory is provided by O.N.C. which also operates a station at Hannah Bay during the annual goose hunt. In 1964, the base station at Moosonee was conditioned to communicate with two Hudson's Bay Company vessels which ply James Bay and Hudson Bay. The O.N.C. facilities are directed from the exchange at Cochrane.

The tide controls ship movements in the Moose River, as far upriver as Moosonee. Ships that use the Bay time their arrivals and departures to coincide with high tide over the bar at the mouth of the river near Ship Sands, while canoes running between Moosonee and Moose Factory add a mile or two to their passage at low tide.

Major hydro-electric power developments have been carried out on the Abitibi and Mattagami rivers in the James Bay watershed. In 1963, the third and fourth units at the Otter Rapids Generating Station on the Abitibi and the first and second units at Little Long on the Mattagami went into operation. Two years later, two units went into operation at Harmon. Kipling Generating Station, the last of the sites currently being developed in the area, will go into service in 1966. Of great significance is the extra-high-voltage transmission line linking these plants to load centres in the South. When the line is completed, sometime in 1966, the entire system will operate at 500 kilovolts.

Maintenance and equipment checks of all stations in the northeastern network are carried out by travelling crews based at *Abitibi Canyon Colony* which was established in 1933 to accommodate operating personnel at the Abitibi Canyon Generating Station. The community has since been much enlarged and modernized. By mid-1966, construction of a 45-mile secondary highway was completed between Smooth Rock Falls on Highway 11 and Frasdale, near Abitibi Canyon G. S. It will connect with a 27-mile access road from the Colony to Little Long G. S.

DISTRICT OF TIMISKAMING

Immediately south of Cochrane lies the District of Timiskaming. Much of its 5,896 square miles is underlain by the precambrian rocks of the Canadian Shield in which are found both precious and base metals. A silver strike at Cobalt in 1903, uncovered by chance during the construction of the Temiskaming and Northern Ontario Railway, brought the first rush of settlers into the area. One of the first areas to be developed was Elk Lake-Gowganda. The first significant gold strike in Northeastern Ontario occurred at Larder Lake in 1906. With the closing of a number of mines due to ore depletion and the lack of new strikes in the area, the importance of gold and silver mining to the economy of the District is declining. The development of the Adams iron mine and pelletizing mill in Boston Township, 12 miles south of Kirkland Lake, is thus of great significance to the economy of the area. The \$30 million Jones and Laughlin Steel Corporation venture began production in December 1964. When full production is reached, it is anticipated that one million tons of pellets will be shipped annually over O.N.R. and connecting rail lines to Jones and Laughlin plants in Pennsylvania and Ohio. In 1963, mineral production in Timiskaming totalled \$29.8 million, with gold accounting for more than \$22 million, and silver for \$7.1 million. Small amounts of copper, cobalt and nickel are also mined in the District.

The Little Clay Belt, in the vicinity of New Liskeard, is one of the most important agricultural areas in the Region. Although heavy clay loam predominates

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there are sections with lighter soils and better drainage which permit earlier spring seeding. The raising of cattle, particularly dairy cattle, is the chief agricultural activity. In 1964, more than 1.3 million pounds of creamery butter, 44 per cent of total Northeastern Ontario production, and nearly 480,000 pounds of cheddar cheese were produced in Timiskaming. It is the only District in Northern Ontario to produce any substantial amount of cheese. Hay, clover, oats and mixed grains are grown, primarily as feed for cattle. Some small fruits such as raspberries, blueberries and black currants do well in this area and both early and late varieties of potatoes are grown for seed and local consumption. Much of the farm produce such as grain, seed, eggs, poultry and livestock is sold through the Timiskaming Producers' Co-operative located in New Liskeard.

Activity in the forest-based industries is centred in Kirkland Lake. Poplar plywood, birch-faced plywood, particle board and lumber are the major products. Other items manufactured in the District include mining machinery and equipment.

One-quarter of the labour force in Timiskaming is engaged in mining, 17 per cent in services, 14 per cent in trade, 11 per cent in transportation, communications and other utilities, 9 per cent in manufacturing, 7 per cent in agriculture and 5 per cent in forestry.

The District is served by the Ontario Northland Railway which connects with both the C.N.R. and C.P.R., and by Air Canada which provides regular air service into Earlton. Highway No. 11 is the major road with secondary highways leading off it to other centres, e.g. No. 66 to Kirkland Lake and the Quebec border and No. 560 west to Gowganda and Gogama. Northern Ontario Telephone provides primary telephone service while Ontario Northland Communications provides long distance service.

The population of Timiskaming stood at 50,971 in 1961. Of this total, 17,760 or 35 per cent lived in rural areas. The rural population declined by about 13 per cent in the decade between 1951 and 1961 while the urban population rose by 12 per cent. Forty-seven per cent of the population is of British origin and 31 per cent is French.

The largest municipality in the District is *Teck Township*, with a population of 17,422 in 1961. Most of the people in the township live in the unincorporated centre of *Kirkland Lake* (15,366), which is located on Highway No. 66 about 160 miles north of North Bay and 80 miles southeast of Timmins. It is served by the Ontario Northland Railway and several truck transportation companies while Air Canada service is available at Earlton, 40 miles to the south. Cobalt is the nearest customs port of entry. Communication media include telephone service provided by Northern Telephone Limited, The Northern Daily News and radio station CJKL.

Gold mining, although declining in importance because of reduced ore reserves, still employs a large segment of the labour force. The chief mines in the area (extending beyond township lines) are Kerr-Addison Mines Ltd., Macassa Gold

Mines, Teck-Hughes Gold Mines Ltd. and Upper Canada Mines Ltd. About 12 miles south of Kirkland Lake, in Boston Township, is the Adams iron mine of the Jones and Laughlin Steel Corporation. Some 400 persons are employed in the mine and in the production of iron pellets. A spur line into the property was built by O.N.R. to facilitate shipment of the pellets to steel works in the United States. Although located beyond the township, this operation has a definite effect on the economy and well-being of the municipality.

The production of forest products also employs a large portion of the community's labour force. One firm, Jamar Plywood Ltd., manufactures poplar and birch plywood while three or four turn out lumber products, pulpwood, ties and mining timber. The largest of these is Kokotow Lumber Ltd. Mining and industrial equipment are also produced in Kirkland Lake—by Heath and Sherwood Ltd. This company also does contract diamond drilling. In addition to its manufacturing and mining activities, Kirkland Lake is becoming a warehousing centre for the northern part of the Region and the northwestern part of Quebec.

The Northern Ontario Institute of Technology was established at Kirkland Lake in 1962. It provides three-year diploma courses beyond secondary school graduation in engineering technology (Chemical, Civil, Electronic and Mechanical) and Business Administration. The programs of study are similar in nature to, but briefer and more technical in content than engineering and management curricula at the universities.

About 25 miles south, on Highway No. 11, is the town of *Englehart* (1,786). The main employer, with a staff of some 190 persons, is the Ontario Northland Railway. One of the major railway functions, that of Chief Dispatcher, is carried out from this point. Pulpwood and lumber are produced in the vicinity.

Another 25 miles south on Highway No. 11 is the town of *New Liskeard*, the most northerly of the Tri-Towns. It is built on the shores of Lake Timiskaming and offers to resident and tourist alike good boating, fishing, swimming and safe, sandy beaches. Lake Timiskaming is 92 miles long and lies between the provinces of Quebec and Ontario. Rail service is provided by the O.N.R. and the nearest airport for Air Canada flights is Earltown. The town's population, 4,896 in 1961, was 16 per cent above the 1951 level.

The Ontario Demonstration Farm is located on the outskirts of the town. It was established to demonstrate proper farming methods for the District and to test varieties of field crops most suited to local conditions. The Farm serves as a means of introducing good livestock into the area as well as demonstrating their proper care and management.

The largest employer is the Northern Telephone Company whose head office is located here. It provides communication services to much of Northeastern Ontario, Northwestern Ontario and Northwestern Quebec. Forest products are also important to the economy of the community. A. E. Wicks Limited produces

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lumber, pulpwood and mining timber while Rexwood Products Limited manufactures particle board. Other products include wood and steel shelving, ice cream and butter.

Haileybury (2,638) is the District Town and contains the courthouse and associated buildings. It is also the site of the Provincial Institute of Mining which was first opened in September 1945. The Institute provides a three-year technical course in mining. Early in 1966 a \$900,000 expansion program was approved to provide new chemistry, geology and mineralogy laboratories, lecture rooms, gymnasium and auditorium facilities. As a result, capacity of the school will be doubled to accommodate 300 students.

Like New Liskeard, Haileybury is built on the shore of lovely Lake Timiskaming and offers a wide variety of outdoor activities. The town is on Highway No. 11 and is served by the O.N.R. Contract diamond drilling is carried out by Morissette Diamond Drilling Co. and diamond drill parts are made by Morissette Manufacturing and Sales. Lumber products are made by the Haileybury Lumber Co.

The main economic concern of Cobalt's more than 2,200 residents is the mining of silver. More than five million ounces of the metal are produced annually in the District. Hiho Silver Mines, Limited (wholly owned by Glen Lake Silver Mines, Limited), Agnico Mines, Limited and Silverfields Mining Corporation, Limited are the major mines in the immediate vicinity. Siscoe Metals of Ontario, Limited is carrying out mining and milling operations near Gowganda. Considerable exploration and development work is currently being done in the Cobalt area. Silver-cobalt ores and concentrates from all but one mine in the Gowganda-Cobalt area are refined by Cobalt Refinery Ltd. The refinery also produces refined arsenic, cobalt oxide and nickel oxide. A small foundry producing iron and alloy castings, ball and tube mill liners and pump parts is also located in the town. Canada's first mining museum was opened in Cobalt in 1961.

DISTRICT OF NIPISSING

Some 7,560 square miles of land, about seven per cent of the total land area of the Region, lie within the boundaries of the District of Nipissing. Rocky formations, fertile valleys and numerous lakes and rivers are characteristics of the District which is underlain by the precambrian rocks of the Canadian Shield.

In addition to the transcontinental lines of both the C.N.R. and the C.P.R., Nipissing is served by the O.N.R., the southern terminal of which is located in North Bay. The C.N.R. operates in conjunction with the latter to provide a direct link between centres in Northeastern Ontario and Toronto. Highways No. 11 and 17 also traverse the District, connecting it with the rest of the Province.

Forest-based industries, mining equipment production, tourism, and transportation and communication services are the major elements in the economy of the District. Agriculture is concerned particularly with the raising of cattle, especially

dairy cattle and plays an important role only in certain special areas. Although mining, except for copper is not yet of major significance, a large open pit iron mine is being developed near *Timagami*. The \$40 million Sherman Mine project is a joint venture of Dominion Foundries and Steel Company of Hamilton (90 per cent interest) and Cliffs of Canada, Limited. Development plans call for the annual production of one million tons of pellets starting in January 1968. The pellets will be shipped to Hamilton via O.N.R. and C.N.R. It is anticipated that the mine and plant together will provide jobs for more than 300 persons.

Of the total labour force of over 22,000, 22 per cent are engaged in service industries, 16 per cent in transportation, communication and other utilities, 15 per cent in each of manufacturing and trade, 10 per cent in public administration and defence, 7 per cent in construction and 4 per cent in each of forestry and agriculture.

Algonquin Park with its nearly two million acres of forests, lakes and rivers, is the largest and most popular Provincial Park in the Region. During 1965, nearly 506,000 people visited the park and about 74,000 camped there. Other Provincial Parks in Nipissing District are Antoine, off Highway No. 533, four miles north of Mattawa; Samuel de Champlain, Highway No. 17, 10 miles west of Mattawa; Finlayson Point, Highway No. 11, south of Timagami; and Marten River, Highway No. 11, 38 miles north of North Bay.

The population of Nipissing District, 70,568 in 1961, increased by 40 per cent in the ten years between 1951 and 1961. More than half this increase took place during the first five years of the period. Nearly 40 per cent of the population lives in rural areas but less than one-fifth of these live on farms. Forty-four per cent of the population is of French origin and 41 per cent British.

Retail sales totalled \$65.4 million in 1961, approximately 71 per cent above the 1951 level. The automotive group accounted for the largest segment, \$19.2 million, and the food group was next with \$16.3 million. Average family income in the District was \$5,235. More than one-quarter of all the families earned \$6,000 or over.

The city of *North Bay* "Gateway of the North" is the administrative centre of the District. Strategically located at the junction of Highways No. 11, 17 and 63, served by the C.N.R., C.P.R. and O.N.R. and all major trucking companies and having regular Air Canada flights both to Toronto and to Sudbury, Timmins and Earltown and thence to northwestern Quebec, Ottawa and Montreal, *North Bay* is the distribution centre for much of the northern part of the Province. The *North Bay Nugget* is published daily and local radio and television coverage are provided by CFCH and CFCH-TV. Its scenic location on the north shore of Lake Nipissing and its association with early French explorers and fur traders make it a centre of attraction for tourists.

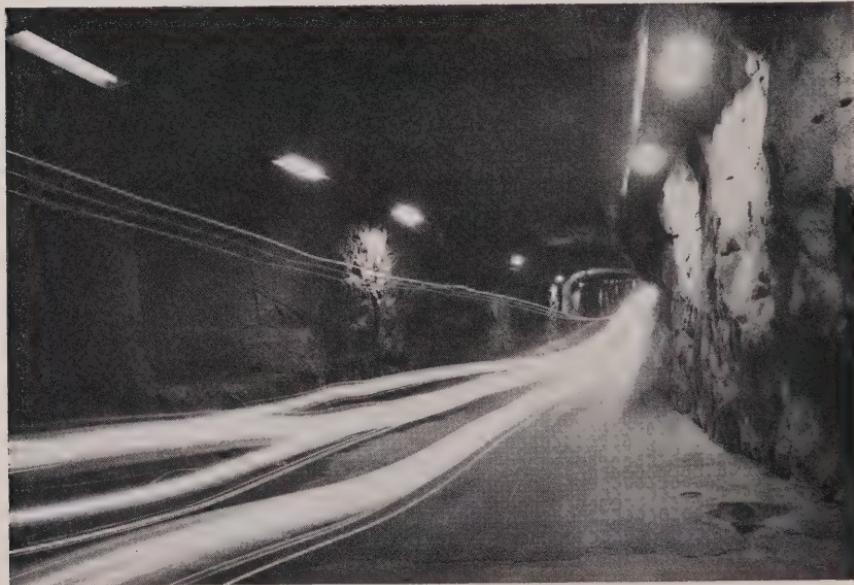
It is generally accepted that the first white man to visit the area was Etiènne Brûlé, in the year 1610. Father Le Caron, a Recollet missionary, crossed Lake

NORTHEASTERN ONTARIO REGION

Nipissing in the summer of 1615 and Samuel de Champlain reached the lake shortly afterward. Jean Nicolet lived with the Nipissing Indians from 1620 to 1629 and established a trading post. The area was actually opened up, however, by the construction of railways late in the nineteenth century. For many years North Bay was essentially a railway town. Industries based on forest products soon established themselves, however, and were shortly followed by industries to supply the needs of newly discovered mines.

The city of North Bay, itself, had a population of 23,781 in 1961, up 32.5 per cent in ten years. The adjoining townships of *Widdifield*, to the north, and *West Ferris*, to the south, had populations of 12,063 and 5,048, respectively, so that the entire area had a population of approximately 41,000 persons.

The major employers in the area are the Ontario Northland Railway and The Bell Telephone Company of Canada. Other large concerns are Canadian Johns-Manville Co. Limited producers of insulating and acoustical panels and Du Pont of Canada, makers of commercial explosives, blasting agents and accessories. A number of establishments produce mining equipment such as diamond core drills, diamond drill bits and portable drills. These include Canadian Longyear Limited, Craig Bit Company, R. J. Minogue & Company Limited, Christensen Diamond Products Co. (Canada) Inc., and Packsack Diamond Drills Limited. Contract



Courtesy — National Defence Photograph.

Vehicle headlights along main entrance tunnel to underground quarters of Northern NORAD Region, near North Bay

diamond drilling is carried out by Inspiration Ltd. and Canadian Longyear Limited. Bronze and brass castings and plastic pipe and fittings are made by Rahn Metals Limited. R. Laidlaw Lumber Co. Ltd. produces building materials, dimension stock and bondwood lumber. Arctic Limited makes canvas products such as tents, tarpaulins, boat covers and packsacks. Other items made in the area include formaldehyde and various formaldehyde resins, detergents, aggregates, custom furniture and fixtures, concrete products and pleasure boats.

The Regional Service Office of the Northern and Central Gas Co. Ltd. is located in West Ferris Township. Telephone service in the area is provided by The Bell Telephone Company. The North Bay Nugget is published daily and local radio and television coverage are provided by CFCH and CFCH-TV.

Just to the north of the city is a Department of National Defence complex responsible for the aerospace defence of more than 13 million Canadians as well as the inhabitants of the northern two-thirds of the State of Maine and the French islands of St. Pierre and Miquelon.

Heart of this complex is the headquarters of the Northern NORAD Region. It is housed in caverns carved from precambrian rock, hundreds of feet inside North Bay's Reservoir Hill. With its modern SAGE (Semi-Automatic-Ground-Environment) electronic equipment, this headquarters controls radar units, defensive missiles and supersonic interceptor aircraft.



Courtesy — National Defence Photograph.

Air defence missiles and their launch shelters, RCAF 446 (BOMAROC B)
Missile Squadron, near North Bay

NORTHEASTERN ONTARIO REGION

At the western edge of North Bay's military complex is the Royal Canadian Air Force's 446 surface-to-air missile squadron. Each of its BOMARC air defence missiles has a range of more than 400 miles, a supersonic speed, and a "kill capability" from tree-top level to more than 70,000 feet.

Sharing the DOT-operated airport is RCAF Station North Bay. Its job is to provide administrative, flying and logistics support to the operational air defence units in the area. 131 Communications Unit (RCAF) is based here. Its aircraft are used on short range communications flights and for search and rescue operations. Annual payroll for the 1,300 military personnel and 300 civilian employees of the military organizations is estimated at \$6,500,000.

Twenty-five miles west of North Bay along Highway No. 17 is the town of *Sturgeon Falls*. Highway No. 64 runs north from here, through Field, to join No. 11 at Marten River. The town is served by the C.P.R. and half a dozen trucking companies. The nearest airport, however, is at North Bay. The Sturgeon River, which is reported to have excellent fishing, runs right through the community. In 1961, Sturgeon Falls had a population of 6,288, an increase of 27 per cent in ten years. Most of this growth took place before 1956. The only large industry in the town is the Abitibi Paper Company Ltd. which produces corrugated board, hardboard and particle board. In the spring of 1966, the company announced a \$3,000,000 expansion and renovation program at this plant. The two-year program is to start in the fall. Production capacity of corrugated medium paper is to be increased by 30 per cent to 220 tons a day.

The town of *Mattawa* (3,314) is on Highway No. 17, 40 miles east of North Bay and the C.P.R. transcontinental line. Its main industry is Weyerhaeuser Canada Ltd. which employs about 275 persons in the production of plywood and veneer. Their prime interest is the production of birch veneer for export, chiefly to the United States. Interest has recently been shown in exporting to Europe. Sturgeon Falls Lumber produces red and white pine and spruce lumber. *Kiosk* is the home of Staniforth Lumber & Veneer Ltd., producers of rough and dressed lumber and birch veneer.

B — NICKEL RANGE

The districts of Manitoulin and Sudbury together make up the sub-region known as the Nickel Range. Some 180,000 people, more than one-third of the Region's population, live in this area which contains less than one-fifth of all the land. The mining, smelting and refining of metals is the major economic activity in Sudbury District while agriculture and tourism are of particular importance in Manitoulin.

DISTRICT OF MANITOULIN

With a land area of 1,585 square miles, Manitoulin is the smallest district in Northeastern Ontario. It consists of one large island (Manitoulin Island), a number

of small islands lying in close proximity to it, and a portion of the mainland lying between Georgian Bay and the District of Sudbury.

Manitoulin Island, 1,073 square miles in area, is said to be the largest fresh water island in the world. It is nearly 100 miles long and from 3 to 40 miles wide. More than 100 lakes dot its surface, the three largest being Kagawong, Mindemoya and Manitou. Main access to the Island is via Highway No. 68 from Espanola to Little Current. During the summer months ferry service is available between Tobermory at the tip of Bruce Peninsula and South Baymouth and between Blind River and Meldrum Bay. Excellent harbour facilities for yachts are available at both Little Current and Gore Bay. The latter centre has a fully equipped airport while Little Current has a turf strip capable of handling small twin-engine aircraft and also facilities for fuelling and handling pontoon-equipped planes. A branch of the C.P.R. also runs into Little Current.

Physiographically, Manitoulin and Cockburn Islands are extensions of the Niagara Escarpment. Their climate is moderated by Lake Huron and Georgian Bay and is less severe than on the mainland. That part of the District is part of the Canadian Shield and is rugged in terrain. Forestry and tourism are the most important activities carried on there. A 90,000-acre Provincial Park was opened at Killarney in the summer of 1963 and in that first year was visited by more than 3,400 persons. In 1965, more than 17,600 persons including nearly 3,000 campers visited the park. Yachting, duck hunting and fishing have been carried on for many years in this area.

The tourist industry plays an important role in the economy of the Island as well. Dozens of lakes, bays and inlets annually attract visitors interested in sailing, boating, swimming, fishing or just relaxing and many camps and resorts are ready to accommodate them. Grouse and deer hunting are also popular. The annual Wikwemikong powwow attracts many tourists. In 1964, representatives from 25 Indian tribes from all across North America performed dances and ceremonies during their three-day powwow.

Agriculture is the most important economic activity in the District. Nearly 28 per cent of the total land area is in farms. Two-thirds of the 728 farms sold products valued at \$1,200 or more and eight farms had sales of \$25,000 or more. Agriculture tends to follow two main patterns of development. Where the soil is deep, for example, mixed farming prevails while on the shallow, stony soils, grazing predominates. Although a few good dairy herds supply local needs, beef cattle are, in the long run, the mainstay of the economy. The raising of turkeys has also been of some significance in past years.

Early in 1965, Manitoulin District was declared a rural development area and a program to improve its economic prospects was worked out under the Agricultural Rehabilitation and Development Act. The Federal and Provincial governments agreed to share the cost of a \$650,000 development program. The raising of cattle, particularly beef cattle, is being encouraged by the establishment of

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community pastures and a land consolidation plan. In addition, improvements are to be made in both processing facilities and management at the Gore Bay turkey plant. These are expected to bring about a considerable increase in production.

More than one-quarter of the District's labour force were engaged in agriculture in 1961, 20 per cent in service industries, 13 per cent in each of trade and utilities, 7 per cent in forestry and 5 per cent in each of construction and manufacturing. Since that time, the Ontario Paper Company has ceased its logging operations on the Island and the importance of forestry has declined.

The population of the District totalled 11,176 in 1961. Although this figure represented a decrease of 0.3 per cent in the ten years between 1951 and 1961, it showed an increase of one per cent during the last five years of this period. A larger proportion of the population, 86 per cent, is rural than in any other district in the Region. This, in spite of the fact that rural population declined by two per cent between 1951 and 1961 while urban population rose by nine per cent. About two-thirds of the people in the District are of British origin. The next largest group is native Indian. There are nine Indian Reserves in the District with a total population of some 3,000.

The town of *Little Current* (1,527) is the largest settlement in the District. It is, as well, the gateway to the mainland—Highway No. 68 connects it with the Trans-Canada Highway at Espanola while a C.P.R. branch connects it with the Sudbury-to-Sault Ste. Marie line. Little Current is also the chief port on the Island. In 1964, more than one million tons of cargo were handled by the C.P.R. docks, most of the tonnage comprising iron ore pellets loaded and bituminous coal unloaded, both in foreign shipping. Iron ore pellets from The International Nickel Company of Canada's Sudbury operation are shipped through this port. Improvements in loading facilities have been made quite recently and it is anticipated that the Federal Government will spend approximately \$200,000 for harbour improvements in 1966-67.

The town has a small grass strip airport and facilities for pontoon-equipped aircraft. The nearest airport of any size, an Air Canada emergency field, is at *Gore Bay* which is also the administrative centre of the District. The town is approximately 40 miles southwest of Little Current, at the foot of a bay cutting into the north shore of the Island. The Manitoulin Turkey Co-Op is its largest employer.

DISTRICT OF SUDBURY

Much of the 18,058 square miles of land within the borders of Sudbury District is covered with rocks, forests, lakes and streams with but little land suitable for agriculture. Underlain entirely by the precambrian rocks of the Canadian Shield, it is a land rich in mineral and forest resources, a land primarily for miners, lumbermen, hunters and tourists.

There are, however, pockets of arable land circling the city of Sudbury—Bleizard Valley to the north, the Sault Highway area to the southwest, the Burwash and French River districts to the south and the St. Charles area to the east. Less than three per cent of the District's population lives on farms. Between 1951 and 1961, the number of farms declined by nearly 50 per cent and the area by 36 per cent so that in 1961 less than two per cent of total land area was in farms. Of the 841 farms existing in 1961, nearly 60 per cent sold products valued at less than \$1,200. Three farms, however, grossed \$25,000 or more. Dairy farming is the most important aspect of agriculture in Sudbury. Hay, oats and mixed grains are grown primarily as feed for cattle. The city of Sudbury provides the main market for local produce.

More than three-quarters of the District is productive forest land and, as might be expected, sawmills dot the area. The one plywood and veneer mill in the District, located at Chapleau, was destroyed by fire late in 1964. The plant has been rebuilt and operations are expected to commence during the summer of 1966.

The tourist industry is an important if uncalculable part of the economy of the District. The forests, lakes and streams, the excellent hunting and fishing each year attract many people into the out-of-doors. Bear hunting in the spring and deer, moose and game birds in the fall, bring many hunters back year after year. There are five Provincial Parks in the District. In 1965, Five Mile Lake had nearly 9,200 visitors, Ivanhoe Lake, 13,600, Chutes had over 100,000 visitors, Fairbank 33,300 and Windy Lake about 112,000. A total of some 29,000 camped in the five parks that year. A new park, Sandy Shoals, is being established in the Chapleau area but will not be open to the public for some time. The Canadian Centennial Numismatic Park is located just outside the city of Sudbury.

Mining, however, along with its dependent industries, remains the major economic activity in and mainstay of the District. The Sudbury Basin continues to be the world's greatest nickel and platinum producing area. In 1964, the value of minerals produced in the District totalled \$419.4 million. Of this amount nickel accounted for \$265.2 million and the platinum group of metals for \$25.4 million. Other metals produced include copper (\$94.2 million in 1964), iron ore (\$21.5 million), cobalt (\$4.1 million), gold (\$2.9 million) and silver (\$2.0 million).

Approximately 30 per cent of the District's labour force is engaged in mining, 17 per cent in service industries, 13 per cent in each of manufacturing and trade, 9 per cent in transportation, communication and other utilities, and 6 per cent in construction.

With a population of 165,862 in 1961, Sudbury is the largest district in the Region. Its population grew by 51 per cent in the ten years between 1951 and 1961 but only by 17 per cent in the second half of the period. Although more than one-quarter of the population lives in rural areas, less than three per cent live on farms. Some 39 per cent of the population is of French origin and 33 per

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cent is British. The next largest ethnic group is Italian and it makes up only 5 per cent of the total.

The largest city in the District and in the Region is *Sudbury* with a population of 80,120 in 1961. Surrounding towns include Copper Cliff (3,600), Lively (3,211), Levack (3,178), Capreol (3,003), Coniston (2,692) and Chelmsford (2,559). In addition, mining settlements are located at Falconbridge, Garson and Creighton. Sudbury was incorporated as a town in 1893 and as a city in 1930. Amalgamation with surrounding townships took place in 1960.

Sudbury is located on Highways No. 17 and 69, 235 miles northwest of Toronto. It is a divisional point and marshalling centre for the main transcontinental line of the C.P.R. A spur from the transcontinental line of the C.N.R. runs into the city. Air Canada has two flights daily to Toronto and frequent service to Timmins; charter flights can be arranged with Austin Airways Ltd. and Sudbury Aviation Ltd. Sudbury is a customs port of entry and a distribution centre for this part of the Region.

One daily paper, *The Sudbury Daily Star*, and two weeklies, *The Sudbury Scene* and *L'Ami du Peuple*, are published in the city. There are four radio stations—CKSO, CKSO-FM and CHNO, English language and CFBR, French language and two television stations, CKSO-TV and CBFST-1. The Bell Telephone Company provides telephone service.

Although no mines or smelters are located within the city limits, the history of Sudbury has been closely related to their activities. Many of the people working in the mines and mills of the area live in the city and for many others it is the main shopping centre. Average family income in 1961 was \$6,333, second only to Sault Ste. Marie in the Region. Average for the Region as a whole was \$5,634 and for the Province, \$5,868.

The Laurentian University of Sudbury was established as a non-denominational, bilingual institution in March 1960, with provision to include church-related universities. Agreements of federation have since been signed with the University of Sudbury (Roman Catholic), Huntington University (United Church of Canada) and Thorneloe University (Anglican Church of Canada). For the first four years, lectures were given in temporary quarters. In 1963, construction of a new campus was begun and in the fall of 1964 the first classes were held in the new buildings. In the 1960-61 academic year, 183 full-time students were registered; in 1964-65 there were 555. It is expected that there will be 1,800 full-time students by 1970-71 and 4,000 by 1980-81.

More than one-quarter of the labour force of Sudbury City is engaged in mining, 20 per cent in service industries, 15 per cent in trade, 13 per cent in manufacturing and 7 per cent in transportation, communication and other utilities.

Lumber, mining timber, ties, pulpwood and pulpwood chips are produced by several establishments, the largest of which is Austin Lumber (Dalton) Limited.

A variety of metal products is also produced in the city, including structural steel, iron castings, grinding balls, mine hardware and forgings. One of the largest employers in this category is the Noront Steel Construction Co. Ltd. Other manufactured goods include beer and ale, soft drinks, asphalt mixtures and concrete products.

Offices of The International Nickel Co. of Canada Ltd. are located in *Copper Cliff* which is about four miles west of Sudbury on Highway No. 17. A concentrator, smelter, refinery, research laboratory and iron ore recovery plant are operating there. Products include high grade iron ore pellets and nickel oxide; refined copper, gold, silver, selenium and tellurium; semi-refined platinum group metals; and nickel sulphate. Nickel oxide sinter 90 was introduced late in 1965. Containing 90 per cent nickel, this product is well suited for use at the base charge or final addition in many smelting operations. The company is currently engaged in a large mine expansion program, including five new mines in the Sudbury area. In addition, a new 22,500-ton per day concentrator will be built adjacent to the Frood-Stobie mine.

Falconbridge Nickel Mines Limited, the world's second largest producer of nickel, is located in *Falconbridge Township*. Its property was first acquired in the late 1920's and by 1930 a mine and smelter were in operation. Shortly after it was established, the company purchased an existing refinery at Kristiansand in Norway. Falconbridge matte—a product of the smelter which contains mostly nickel and copper—is still being processed at this refinery. A substantial part of the nickel produced returns to North America, and the balance is distributed mainly among various countries in Western Europe. Japan, however, is becoming an important market. The company has a number of producing mines as well as others under development in the Sudbury Basin. Its property holdings in the area exceed 75,000 acres. A 6,000-ton per day mill is being erected at the Strathcona mine which is now under development. Production is scheduled for late 1967 at an estimated cost of over \$40 million. Products of the company include nickel, copper, cobalt, gold, silver, platinum metals, liquid sulphur dioxide and selenium residues.

Canadian Industries Limited, Chemical Division, produces sulphuric acid at three plants in Copper Cliff. The first was built in 1930 and the second in 1958. The third was moved from its original location at Cutler and went into operation early in 1964. The new plant uses as its raw material the smelter fumes from the adjoining iron ore recovery plant of International Nickel. Much of the total production goes to Elliot Lake for use by the uranium mines while some is shipped by lake freighter to Sarnia and by tank car and tank truck to Hamilton, Ontario and Montreal and Tracey, Quebec. It was announced early in 1966 that C.I.L. would spend some \$6 million on expansion of its sulphuric acid manufacturing facilities at Copper Cliff. The expansion will more than double the plants capacity. The job is scheduled to be completed in the spring of 1967.

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The largest Canadian user of sulphuric acid is the fertilizer industry but considerable amounts are used by the pulp and paper, textiles and plastics industries, in uranium and petroleum refining, explosives and pigment manufacture, steel pickling and electroplating.

The town of *Capreol*, on Highway No. 69 about 18 miles northeast of Sudbury, is a divisional point of the C.N.R. and the site of the general offices for the railway's northwestern area. Imperial Oil Limited has established a bulk distribution plant



Courtesy — Ontario Department of Tourism and Information.

Moose Mountain Mine, Lowphos Ore Limited, Capreol

and iron ore pellets and concentrates are produced by Lowphos Ore Limited. *Chelmsford*, 12 miles northwest of Sudbury on Highway No. 544 and the C.P.R. is the centre of an agricultural pocket in the Sudbury Basin. The raising of dairy cattle is an important aspect of agriculture in this area. Hay and oats are grown, primarily for cattle feed. Potatoes are also an important crop.

Highway No. 101 from the east and No. 129 from the south meet within the Township of Chapleau (3,785). The community is a divisional point on the transcontinental line of the C.P.R. and a centre for lumber operations in the area. About a dozen producers of rough and dressed lumber, ties and mining timber are located there. The only plywood producer in the area, A & L Lafreniere Ltd., burned down late in 1964. It has now been rebuilt and is expected to begin

operations sometime in 1966. Multi-Minerals Limited are developing a property near Chapleau for the recovery of phosphorous and the ultimate production of phosphoric acid. About 25 miles to the south is Five Mile Lake Provincial Park, 1,010 acres in area, with camping facilities.

The K.V.P. Company Limited is located at *Espanola*. Expansion plans now under way (\$17.6 million) will double bleached kraft pulp production to 650 tons per day. Completion is scheduled for late 1966—early 1967. Specialty papers for printing and other end uses, parchments, turpentine and tall oil are also produced. *Espanola* (5,353 in 1961) is on Highway No. 68, just south of No. 17. It is served by the C.P.R. The town of *Massey* (1,324) about 20 miles west of *Espanola*, is located at the junction of Highways No. 553 and No. 17. A small plant produces concrete blocks and bricks. Chutes Provincial Park is located one mile north, on Highway No. 533. In 1965, of the 100,375 people who visited the park, nearly 13,000 took advantage of its camping facilities.

C — SAULT

DISTRICT OF ALGOMA

With a land area of 19,320 square miles, Algoma is the second largest district in Northeastern Ontario. It is bounded on the south by the North Channel, on the west by Lake Superior and Thunder Bay District, on the north by Cochrane and on the east by Sudbury. As in much of the North, it is a land of contrast—a vast wilderness of rocks and forests, rushing streams and lakes on the one hand and Canada's second largest steel complex and a city of 65,000 persons, on the other. But still, the wealth of the District is based on its natural resources, its minerals, its forests, its scenic grandeur, and its location—on the river which joins Lakes Superior and Huron and separates Ontario from the State of Michigan.

The most important minerals found in the District are iron ore in Michipicoten Township, copper in the Blind River area and uranium at Elliot Lake. Other minerals include lead, zinc, nickel, gold and silver. Extensive exploration is being carried out, especially in the Batchawana and Elliot Lake areas. Lumber, pulp, plywood and veneer are produced from the forests of Algoma while its rivers have been harnessed to provide power—the Michipicoten and Montreal by the Great Lakes Power Corporation and the Mississagi by Ontario Hydro. A connection has been made between the two systems for more efficient operation. Arable land is found mainly along the rivers, especially the St. Marys River, and on St. Joseph Island. Mixed farming predominates and the produce is generally consumed locally.

With the opening of the International Bridge linking the Twin Cities of Sault Ste. Marie, Michigan and Sault Ste. Marie, Ontario and the completion of the Trans-Canada Highway, the tourist industry has assumed a more important role in the economy of the District. The "circle tour" around Lake Superior, for example, is becoming quite popular with motorists.

NORTHEASTERN ONTARIO REGION

There are five Provincial Parks in Algoma. The largest by far is Lake Superior, 333,632 acres along the east shore of the lake, about 90 miles north of Sault Ste. Marie. In 1965, some 113,400 people visited the park and 31,295 camped there. Pancake Bay and Batchawana Provincial Parks are located 50 and 40 miles north of Sault Ste. Marie, respectively. All three can be reached by Highway No. 17. Mississagi Park, north of Elliot Lake and Obatanga, east of White River, were opened in 1963.

The District can be reached by the Trans-Canada Highway No. 17 which follows the shore of the North Channel and Lake Superior, by Highways No. 101 and 129 from Timmins through Chapleau to Thessalon, by the C.P.R. from Sudbury and connecting points, by the Algoma Central which runs north through the District to Hearst connecting with the C.P.R. transcontinental line at Franz and the C.N.R. at both Oba and Hearst, and by the International Bridge from Michigan. Air Canada makes regular flights into Sault Ste. Marie and charter air service is available. A highway currently under construction between Wawa and Chapleau will be in service by 1967.

In 1961, the District of Algoma had a population of 111,408, and had, over the previous ten years, experienced the fastest growth of any district in Northeastern Ontario—73 per cent between 1951 and 1961 and 36 per cent between 1956 and 1961. Average growth for the Region as a whole was 37 per cent in the first period and 17 per cent in the second. While 27 per cent of the population lives in rural areas, only 5 per cent lives on farms. Rural population rose by 60 per cent between 1951 and 1961 and urban population by 78 per cent. Nearly half of the people (47 per cent) are of British descent while 19 per cent are French, 10 per cent Italian and 4.5 per cent German. There are a number of Indian Reserves in the District with a total population of about 2,200. They are located at Batchawana, Garden River, Michipicoten, Mississauga, Serpent River, Spanish River and Thessalon.

Sault Ste. Marie, District City of Algoma, is located on the north shore of the St. Marys River which joins Lakes Superior and Huron. It is on the Lake Superior Route of the Trans-Canada Highway, 186 miles west of Sudbury and is served by both the Canadian Pacific Railway and the Algoma Central Railway. Air Canada operates regular flights to the city; charter air service is also available. It is also a very busy port—in 1964, 5.7 million tons of cargo were handled. Bituminous coal and iron ore and concentrates made up two-thirds of the total. The International Bridge linking the city with Sault Ste. Marie, Michigan was opened in 1962, replacing a 75-year-old ferry service. The opening of the bridge and the closing of the gap in the Trans-Canada Highway have contributed to a greatly increased flow of tourist traffic.

Electricity for both Sault Ste. Marie and Algoma is supplied by Great Lakes Power Corporation Limited. Telephone service in the city is provided by The Bell Telephone Company. Other communication media include The Sault Daily Star,

two radio stations (both with FM outlets) and a television station. Laurentian University of Sudbury has granted affiliate status to a proposed college to be called Algoma College. The College may be open in time for the fall session in 1967.

The history of the area is of considerable interest. The first known visit of white men occurred in 1622 when two French explorers, Etiènne Brûlé and Grenolle visited the rapids at which is now the city of Sault Ste. Marie. They were followed by Jean Nicolet in 1634 and by Fathers Joques and Raymbault in 1641. A Jesuit mission was established in 1669. In 1750 a French fort was built. It was captured by British forces in 1762 and from that time remained under British control.

In 1783, the North West Company built a trading post near the rapids and in 1797 the first lock for the old bateaux was built. The Hudson's Bay Company later built the "Blockhouse" which is still standing. Power developed from the rapids in the early 1780's attracted the first industries to the Sault—steel and paper. The first main lock, which is still in operation, was built between 1888 and 1895. Other locks were subsequently built on the American side of the rapids.

Sault Ste. Marie was incorporated as a town in 1887, became a city in 1912 and was amalgamated with the adjacent townships of Korah and Tarentorus on January 1, 1965. In 1961, the population of these three was as follows: Sault Ste. Marie 43,088, Korah 10,338 and Tarentorus 11,537. The last named had more than tripled in size since 1951.

The largest industry in Sault Ste. Marie is The Algoma Steel Corporation, Canada's second largest steel producer. In its fully integrated operation it produces coke, coal chemicals, pig iron and a variety of steel products. A new 80-inch Wide Cold Strip Mill was brought into operation in 1965. Late that year it was announced that the Corporation would spend about \$175 million to increase its steel-making capacity by 40 per cent, to 3,750,000 tons annually. Completion of the program is expected in mid-1969 or 1970. The expansion will be integrated to include coal, iron ore, raw steel and finished steel products. Employment at the steelworks average 7,900 in 1964 with an additional 1,000 at the Algoma Ore Properties Division, Wawa. Another large employer is the Algoma Central Railway, with a staff of some 850. Its head office and southern terminal are located in the city. Other large companies include Abitibi Paper Company Limited, manufacturers of newsprint and groundwood specialty papers; Weyerhaeuser Canada Limited, birch, maple and elm veneers, lumber and hardwood flooring; and Mannesmann Tube Company Ltd., hot rolled seamless casing, line pipe, standard pipe, mechanical tubing and pressure pipe. Fabricated structural steel, castings, bearings, custom mine and mill machinery, oxygen, beer and ale, refined tar and creosote are also produced in the city.

Early in 1965, the Federal Department of Transport announced its intention of building a \$1,000,000 marine operations base in Sault Ste. Marie. It has also



Courtesy — Weyerhaeuser Canada Limited.

Veneer splicing room, Weyerhaeuser Canada Limited,
Sault Ste. Marie

been announced that the Federal Department of Forestry plans to establish a regional office for Ontario in the city.

Tourists and residents alike find much to enjoy in the surrounding countryside—magnificent scenery whether one goes north, east or west, along the shores of the river or lake or into the hinterland; excellent fishing for whitefish, perch, bass, sturgeon and trout; an abundance of game for the hunter; and skiing for the winter sports enthusiasts. Six miles north of the city is a 240-foot ski jump as well as one main hill and trails. At Searchmont, 32 miles north, there is a downhill and slalom course and wooded trails.

About 140 miles north of Sault Ste. Marie, where the Magpie and Michipicoten rivers join before flowing into Lake Superior, a fur trading post was built by the North West Company in the early 1800's. This post served Indians and trappers from as far north as James Bay until it was closed in 1904. In 1883, Wawa became the main stopping point for teamsters hauling supplies from Michipicoten Harbour to the C.P.R. transcontinental line which was then being built along the north shore of Lake Superior. In 1897 gold was discovered and Wawa became a "boom town", a thriving mining town despite the difficulty of transporting supplies and equipment 12 miles overland from the Harbour. Although the gold rush died, iron was discovered and by the turn of the century the Helen Mine was in production, employing over 400 men. By 1921, production ceased because of falling prices and insufficient power and Wawa became almost a ghost town. Today, Wawa is once again a prosperous community due to its proximity to Lake Superior, the Algoma Central Railway and the iron ore developments of the Algoma Ore Properties Division of Algoma Steel.

Michipicoten Harbour is one of the oldest ports on the Great Lakes. In 1964, nearly 470,000 tons of cargo were handled, more than 405,000 tons of which

comprised iron sinter from the Algoma Ore Properties Division. The ore docks are served by a branch of the Algoma Central Railway. Great Lakes Power Corporation operates four hydro-electric stations on the Michipicoten River.

Lying in the St. Marys River, 28 miles southeast of Sault Ste. Marie, is *St. Joseph Island*. Residents of the island are concerned primarily with agriculture. The site of an old fort which changed hands between American and British forces during the period from 1796 to 1814 is being excavated by students of the Anthropology Department of the University of Toronto. The site is rich in artifacts. The village of *Hilton Beach*, population 155, is the largest community on the island. A free ferry service connects the island with the mainland.

Lumber and birch veneer are the chief products of the town of *Thessalon*, located about 55 miles east of Sault Ste. Marie on Highway No. 17. Highway No. 129 runs north from here to Chapleau and connects with No. 101 to Timmins. The town had a population of 1,725 in 1961. Birchland Veneer Ltd. and Midway Lumber Mills Ltd. are the main industries in the town.

Another 25 miles east on Highway No. 17 is the town of *Blind River*. The main industries are McFadden Lumber Co.—Division of Domtar Construction Materials Ltd. and Pater Mines Ltd., copper producer. The town's population stood at 4,093 in 1961, 63 per cent higher than in 1951. Midway between Blind River and Thessalon is the village of *Iron Bridge*. Its population of 867 is primarily dependent on the tourist industry.

The *Elliot Lake Improvement District* was incorporated as a township in 1966. It will, however, remain a mining municipality. In 1961 there was a population of 13,179 but this has declined considerably since then because of the closing of most uranium mines and the consequent drop in uranium production. Only three mines—Denison Mines Ltd., Rio Algom Mines Ltd. and Stanrock Uranium Mines Ltd.—are still in production. A 150-ton per year uranium refinery is being built at Rio Algom Mines' Nordic-mine site. It will be the first non-government-owned uranium refinery in Canada. Operations on a research and development basis are planned to begin in May with full commercial operations scheduled for 1967. Rio Algom also produces yttrium oxide as a by-product of its uranium and thorium production. This rare earth compound is required in the manufacture of colour TV tubes. The community of Elliot Lake is located on Highway No. 108, about 18 miles north of No. 17. The Elliot Lake Centre for Continuing Education, a joint Federal-Provincial Project, was opened in 1965. Twelve miles north is the 95,000-acre Mississagi Provincial Park.

At the mouth of the Spanish River which empties into the North Channel, is the community of *Spanish* with a population of some 1,536. On the south shore of the river is the Spanish River Reserve with over 600 Indian residents, while to the west of the community is the Serpent River Reserve with a population of some 300 Indians. The tourist industry is of importance to the economy of this community as to most centres spread out along the Trans-Canada Highway.

Conclusion

This study opens with an outline of the physical features of Northeastern Ontario which, laid down over the centuries, have largely dictated the pattern of development in the Region. It then proceeds to examine the major areas of economic activity. Mining and forestry, carried out on the Canadian Shield and the overlying Great Clay Belt, together with the manufacturing industries based on these resources, are the mainstays of the Region's economy.

The development and expansion of the mining industry and the processing of both base and precious metals has strengthened the economic position of Northeastern Ontario. It has resulted in increased employment both directly and in related industries, provided outlets for mining machinery and equipment manufactured in the Region and for the products of farms and forests, furnished new sources of transportation revenue and stimulated expansion in the construction industry. New mines and mills, especially for the production of nickel, copper and iron, are being developed and extensive exploration is being carried on throughout the Region.

The economic impact of the forest-based industries is also evident in all parts of Northeastern Ontario. Logging, sawmilling, the production of veneer and plywood and pulp and paper are the major components of this industry. Three of the eight pulp and paper companies now operating in the Region are involved in expansion programs totalling more than \$50 million. According to the Department of Lands and Forests, timber growth in the Region could support three additional pulp mills while permitting the existing mills to consume two and a half times their present volume of wood.

Although some of the most fertile soil in the Province is located in Northeastern Ontario, unfavourable climatic conditions, particularly the short frost-free period, poor drainage and distance from large urban centres, have severely restricted agriculture in the Region. Most of the farming is carried out in the Little Clay Belt (which accounts for one-quarter of the total value of agricultural production in the Region), in Manitoulin Island, in pockets of loam and clay soils around Sault Ste. Marie, Sudbury and North Bay and along Highway No. 11 in the northern sector. The raising of cattle, especially beef cattle, is the major agricultural activity, supported by the growing of hay and clover. Special cash crops including potatoes and small fruits such as blueberries are also grown.

Our report indicates that despite a growth in population, diversification of manufacturing industries, development of new educational facilities and growth in services, Northeastern Ontario continues to depend primarily on its natural resources. It is anticipated that intensive development of these resources, both in the field and factory will continue and that the tourist industry will expand as the Region is opened up with the building of new roads.

APPENDIX

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POPULATION DISTRIBUTION, CENSUS SUBDIVISIONS,
NORTHEASTERN ONTARIO REGION, 1951, 1956 AND 1961

	1951	1956	1961	% Change 1961/1951	% Change 1961/1956
A—Clay Belt					
Cochrane.....	83,850	86,768	95,666	14.1	10.3
Black River.....	2,828	2,881	3,091 ¹	9.3	7.3
Calvert.....	4,742	5,233	5,494	15.9	5.0
Fauquier.....	1,009	1,048	1,241	23.0	18.4
Glackmeyer.....	1,218	1,108	1,140 ¹	-6.4	2.9
Kendrey.....	—	1,061 ²	1,074	—	1.2
Kingham I.D. (pt.) ³	76	38	27	-64.5	-29.0
Mountjoy.....	1,701	1,902	2,437	43.3	28.1
Playfair.....	710	754	807	13.7	7.0
Shackleton and Machin.....	961	997	1,106	15.1	10.9
Tisdale.....	8,437	8,092	8,650	2.5	6.9
Val Albert I.D.	—	1,863 ²	2,583	—	38.6
Whitney.....	1,556	1,689	1,838	18.1	8.8
Unorganized.....	19,190 ¹	16,422 ¹	18,549	-3.3	13.0
Indian Reserves.....	749	1,417	930	24.2	-34.4
Towns—					
Cochrane.....	3,401	3,695	4,521 ⁴	32.9	22.4
Hearst.....	1,723	2,214	2,373	37.7	7.2
Iroquois Falls.....	1,342	1,478	1,681	25.3	13.7
Kapuskasing.....	4,687	5,463 ⁴	6,870	46.6	25.8
Matheson.....	675	758	853 ⁴	26.4	12.5
Smooth Rock Falls.....	1,102	1,104	1,131	2.6	2.4
Timmins.....	27,743	27,551	29,270	5.5	6.2
Nipissing.....	50,517	60,452	70,568	39.7	16.7
Bonfield.....	812	946	997	22.8	5.4
Caldwell.....	1,587	1,747	1,854	16.8	6.1
Calvin.....	566	528	513	-9.4	-2.8
Cameron I.D.	268	224	185	-31.0	-17.4
Chisholm.....	872	923	935	7.2	1.3
Ferris East.....	1,046	1,284	1,808	72.8	40.8
Ferris West.....	2,534	3,966	5,048	99.2	27.3
Field.....	1,103	906	1,092	-1.0	20.5
Mattawan.....	692	189	105	-84.8	-44.4
Papineau.....	724	735 ¹	716	-1.1	-2.6
Springer.....	1,114	1,232	1,571	41.0	27.5
Widdifield.....	3,465	7,603 ¹	12,063	248.1	58.7
Unorganized.....	8,128	8,295	8,369	3.0	0.9
Indian Reserves.....	188	269	405	115.4	50.6
Cities—					
North Bay.....	17,944	21,020 ⁴	23,781	32.5	13.1
Towns—					
Bonfield.....	570	609	714	25.3	17.2
Cache Bay.....	845	894	810	-4.1	-9.4
Mattawa.....	3,097	3,208 ⁴	3,314	7.0	3.3
Sturgeon Falls.....	4,962	5,874	6,288	26.7	7.0

POPULATION

POPULATION DISTRIBUTION, CENSUS SUBDIVISIONS,
NORTHEASTERN ONTARIO REGION, 1951, 1956 AND 1961 (Cont'd)

	<u>1951</u>	<u>1956</u>	<u>1961</u>	<u>1961/1951</u>	<u>% Change</u>
A—Clay Belt (Cont'd)					
Timiskaming.....	50,016	50,264	50,971	1.9	1.4
Armstrong.....	1,044	1,149	1,203	15.2	4.7
Brethour.....	288	288	296	2.8	2.8
Bucke.....	1,347	1,663	1,774	31.7	6.7
Casey.....	597	653	679	13.7	4.0
Chamberlain.....	512	421	429	-16.2	1.9
Coleman.....	713	878 ¹	712	-0.1	-18.9
Dack.....	465	452	507	9.0	12.2
Dymond.....	710	841	934	31.5	11.1
Evanturel.....	668	707	714	6.9	1.0
Gauthier I.D.....	269	250	297	10.4	18.8
Harley.....	555	541	534	-3.8	-1.3
Harris.....	350	364	337	-3.7	-7.4
Hilliard.....	380	373	398	4.7	6.7
Hudson.....	389	381	379	-2.6	-0.5
James.....	560	645	701	25.2	8.7
Kerns.....	515	521	516	0.2	-1.0
Kingham I.D. (pt.).....	43	52	52	20.9	—
Larder Lake.....	2,129	2,080	2,187	2.7	5.1
McGarry I.D.....	2,362	2,613	2,998	26.9	14.7
Matachewan.....	1,437	1,063	1,031	-28.3	-3.0
Teck.....	18,392	17,766	17,422	-5.3	-1.9
Unorganized.....	5,062	4,362	4,495	-11.2	3.0
Towns—					
Charlton.....	169	159	157	-7.1	-1.3
Cobalt.....	2,230	2,367	2,209	-0.9	-6.7
Englehart.....	1,585	1,705	1,786	12.7	4.8
Haileybury.....	2,346	2,654	2,638	12.4	-0.6
Latchford.....	504	508 ¹	479	-5.0	-5.7
New Liskeard.....	4,215	4,619	4,896	16.2	6.0
Villages—					
Thornloe.....	180	189	211	17.2	11.6
B—Nickel Range					
Manitoulin.....	11,214	11,060	11,176	-0.3	1.0
Assiginack.....	738	881	805	9.1	-8.6
Barrie Island.....	159	149	146	-8.2	-2.0
Billings.....	369	353	385	4.3	9.1
Burpee.....	327	327	301	-8.0	-8.0
Carnarvon.....	949	959	995	4.8	3.8
Cockburn Island.....	82	59	66	-19.5	11.9
Gordon.....	557	507	490	-12.0	-3.4
Howland.....	416	845	770	85.1	-8.9
Rutherford and George Island..	429	495	484	12.8	-2.2
Sandfield.....	203	203	178	-12.3	-12.3
Tehkumah.....	509	521	473	-7.1	-9.2
Unorganized.....	2,081	1,042	1,075	-48.3	3.2
Indian Reserves.....	2,246	2,474	2,765	23.1	11.8

POPULATION DISTRIBUTION, CENSUS SUBDIVISIONS,
NORTHEASTERN ONTARIO REGION, 1951, 1956 AND 1961 (Cont'd)

	1951	1956	1961	% Change	
				1961/1951	1961/1956
B—Nickel Range (Cont'd)					
Towns—					
Gore Bay.....	752	731	716	-4.8	-2.1
Little Current.....	1,397	1,514	1,527	9.3	0.9
Sudbury	109,590	141,975	165,862	51.3	16.8
Baldwin.....	341	417	505	48.1	21.1
Balfour.....	724	1,440	1,907	163.4	32.4
Bleazard.....	826	2,604	4,615	458.7	77.2
Capreol.....	—	1,023 ²	2,348 ¹	—	129.5
Casimir, Jennings and Appleby.....	851	1,072 ⁴	1,124	32.1	4.9
Chapleau.....	2,619	3,407	3,785	44.5	11.1
Cosby, Mason and Martland.....	859	1,665 ⁵	1,686	96.3	1.3
Dowling.....	376	681 ¹	1,436 ⁴	281.9	110.9
Drury, Denison and Graham.....	817	1,208	1,836	124.7	52.0
Falconbridge.....	—	—	1,349 ²	—	—
Hagar.....	559	607	828	48.1	36.4
Hallam.....	193	193	203	5.2	5.2
Hanmer.....	855	1,512	4,007	368.7	165.0
Martland.....	893	5	—	—	—
McKim.....	11,783	17,4611	6	—	—
Nairn.....	240	248	298	24.2	20.2
Neelon and Garson.....	6,438	13,750	5,286 ⁶	-17.9	-61.6
Onaping I.D.....	—	804 ²	1,106	—	37.6
Ratner and Dunnet.....	1,262	1,165 ¹	1,386	9.8	19.0
Rayside.....	1,357	3,002	4,820	255.2	60.6
Renabie I.D.....	325	285	423	30.2	48.4
Salter, May and Harrow.....	614	635	636	3.6	0.2
Waters.....	991	1,469	2,064	108.3	40.5
Unorganized.....	21,148	22,288 ¹	18,301 ¹	-13.5	-17.9
Indian Reserves.....	285	281	327	14.7	16.4
Cities—					
Sudbury	42,410	46,482	80,120⁶	88.9	72.4
Towns—					
Capreol.....	2,002	2,394	3,003 ⁴	50.0	25.4
Chelmsford.....	1,210	2,142	2,559	111.5	19.5
Coniston.....	2,292	2,478	2,692 ⁴	17.5	8.6
Copper Cliff.....	3,974	3,801 ⁴	3,600	-9.4	-5.3
Espanola.....	2	2	5,353	—	—
Frood Mines.....	109	124	6	—	—
Levack.....	1,833	2,929 ¹	3,178	73.4	8.5
Lively.....	—	2,840 ²	3,211	—	13.1
Massey.....	937	1,068	1,324	41.3	24.0
Webbwood.....	467	500	546	16.9	9.2
C—Sault					
Algoma	64,496	82,059	111,408	72.7	35.8
Day and Bright Additional.....	240	267	299 ⁴	24.6	12.0
Elliot Lake I.D.....	—	3,791 ²	13,179	—	247.6
Hilton.....	90	100	116	28.9	16.0

POPULATION

POPULATION DISTRIBUTION, CENSUS SUBDIVISIONS,
NORTHEASTERN ONTARIO REGION, 1951, 1956 AND 1961 (Cont'd)

				% Change	
	1951	1956	1961	1961/1951	1961/1956
C—Sault (Cont'd)					
Jocelyn.....	176	144	137	-22.2	-4.9
Johnson.....	597	595	629	5.4	5.7
Korah.....	4,618	7,258	10,338	123.9	42.4
Laird.....	438	424	629	43.6	48.3
Macdonald, Meredith and Aberdeen Additional.....	1,014	1,120	1,200	18.3	7.1
Michipicoten.....	—	3,086 ²	4,439	—	43.8
Plummer Additional.....	364	431	446	22.5	3.5
Prince.....	287	393	597	108.0	51.9
St. Joseph.....	804	839	902	12.2	7.5
Tarbutt and Tarbutt Additional.....	200	213	241	20.5	13.1
Tarentorus.....	3,420	6,117	11,537 ¹	237.3	88.6
Thessalon.....	762	655	702	-7.9	7.2
Thompson.....	206	164	127	-38.4	-22.6
White River I.D.....	—	—	836 ³	—	—
Wicksteed.....	1,282	1,659	1,727	34.7	4.1
Unorganized.....	11,362	9,709 ¹	10,716 ¹	-5.7	10.4
Indian Reserves.....	1,389	1,704	2,120	52.6	24.4
Cities—					
Sault Ste. Marie.....	32,452	37,329	43,088 ⁴	32.8	15.4
Towns—					
Blind River.....	2,512	3,633 ⁴	4,093 ⁴	62.9	12.7
Bruce Mines.....	370	451	484	30.8	7.3
Nesterville.....	112	116	79	-29.5	-31.9
Thessalon.....	1,595	1,716	1,725	8.2	0.5
Villages—					
Hilton Beach.....	206	145	155	-24.8	6.9
Iron Bridge.....	—	—	867 ²	—	—
Total, Northeastern Ontario Region	369,683	432,578	505,651	36.8	16.9
Total, Province of Ontario.....	4,597,542	5,404,933	6,236,092	35.6	15.4

¹Part annexed to another municipality between Census Years.²Municipality created between Census Years.³For other part see Timiskaming.⁴Includes annexations from other municipalities.⁵Cosby and Mason and Martland amalgamated as Cosby, Mason and Martland, 1952.⁶McKim, Frood Mine town and part of Neelon and Garson amalgamated with Sudbury city, 1960.

FACTORs IN THE GROWTH OF POPULATION, DISTRICTS,
NORTHEASTERN ONTARIO REGION, 1951 TO 1961 AND 1956 TO 1961

	Population 1951	1951-1961			Percentage of 1951 Population			Population			1956-1961			Percentage of 1956 Population		
		Actual Increase		Net Increase	Actual Migration	Actual Increase	Net Increase	Actual Increase	Net Increase	Natural Increase	Actual Migration	Net Increase	Actual Increase	Net Increase	Natural Increase	
A—Clay Belt																
Cochrane	83,850	11,816	21,538	-9,722	14.1	25.7	-11.6	86,768	95,666	8,896	11,132	-2,234	10.3	12.8	-2.6	
Nipissing.....	50,517	20,051	14,791	5,260	39.7	29.3	10.4	60,452	70,568	10,116	8,271	1,845	16.7	13.7	3.1	
Timiskaming.....	50,016	955	10,405	-9,450	1.9	20.8	-18.9	50,264	50,971	707	5,116	-4,409	1.4	10.2	-8.8	
Sub-total	184,383	32,822	46,734	-13,912	17.8	25.3	-7.5	197,484	217,205	19,721	24,519	-4,798	10.0	12.4	-2.4	
B—Nickel Range																
Manitoulin.....	11,214	-38	1,957	-1,995	-0.3	17.5	-17.8	11,060	11,176	116	953	-837	1.0	8.6	-7.6	
Sudbury	109,590	56,272	39,914	16,358	51.3	36.4	14.9	141,975	165,862	23,887	21,660	2,227	16.8	15.3	1.6	
Sub-total	120,804	56,234	41,871	14,363	46.5	34.7	11.9	153,035	177,038	24,003	22,613	1,390	15.7	14.8	0.9	
C—Sault																
Algoma	64,496	46,912	21,883	25,029	72.7	33.9	38.8	82,059	111,408	29,349	13,864	15,485	35.8	16.9	18.9	
Total, Northeastern Ontario Region	369,683	135,968	110,488	25,480	36.8	29.9	6.9	432,578	505,651	73,073	60,996	12,077	16.9	14.1	2.8	
Total, Ontario	4,597,542	1,638,550	953,493	685,057	35.6	20.7	14.9	5,404,933	6,236,092	831,159	523,107	308,052	15.4	9.7	5.7	

DETAILED RURAL-URBAN DISTRIBUTION OF POPULATION, DISTRICTS,
NORTHEASTERN ONTARIO REGION, 1961

	Rural			Urban			
	Total Population		Non-Farm	Total	30,000 to 99,999	10,000 to 29,999	
	Total	Farm	Total	Total	Total	Total	
A—Clay Belt							
Cochrane.....	95,666	32,321	5,253	27,068	63,345	40,121	—
Nipissing.....	70,568	27,421	5,184	22,237	43,147	33,545	—
Timiskaming.....	50,971	17,760	5,490	12,270	33,211	—	16,510
Sub-total.....	217,205	77,502	15,927	61,575	139,703	73,666	13,158
B—Nickel Range							
Manitoulin.....	11,176	9,649	2,973	6,676	1,527	—	—
Sudbury.....	165,862	47,457	4,382	43,075	118,405	94,854	—
Sub-total.....	177,038	57,106	7,355	49,751	119,932	94,854	—
C—Sault							
Algoma.....	111,408	29,912	5,292	24,620	81,496	58,460	—
Total, Northeastern Ontario Region	505,651	164,520	28,574	135,946	341,131	226,980	16,510

Definition: The 1961 definition specified that all cities, towns and villages of 1,000 and over, whether incorporated or not, were classed as urban, as well as the urbanized fringes of (a) cities classed as metropolitan areas, (b) those classed as other major urban areas, and (c) certain smaller cities, if the city, together with its urbanized fringe was 10,000 population or over. (Any non-urbanized fringes within metropolitan areas were excluded.) The remainder of the population was classed as rural. The classification of "rural farm" comprises all persons living in dwellings situated on farms in rural localities. A farm for 1961 is defined as a holding of one or more acres with sales of agricultural products of \$50 or more.

POPULATION BY PLACE OF BIRTH,
DISTRICTS, NORTHEASTERN ONTARIO REGION, 1961

	Total	Ontario	Other Canada	United Kingdom	United States	Europe	Other
A—Clay Belt							
Cochrane	No.	95,666 (100.0)	64,863 (67.8)	18,090 (18.9)	3,371 (3.5)	807 (0.8)	8,171 (8.5)
Nipissing	%		56,582 (80.2)	8,484 (12.0)	2,283 (3.2)	622 (0.9)	2,400 (3.4)
Timiskaming	No.	50,971 (100.0)	36,487 (71.6)	7,624 (15.0)	2,265 (4.4)	443 (0.9)	3,988 (7.8)
Sub-total	No.	217,205 (100.0)	157,932 (72.7)	34,198 (15.7)	7,919 (3.6)	1,872 (0.9)	14,559 (6.7)
B—Nickel Range							
Manitoulin	No.	1,176 (100.0)	10,546 (94.4)	249 (2.2)	180 (1.6)	96 (0.9)	97 (0.9)
Sudbury	No.	165,862 (100.0)	121,529 (73.3)	21,012 (12.7)	4,133 (2.5)	1,241 (0.7)	17,390 (10.5)
Sub-total	No.	177,038 (100.0)	132,075 (74.6)	21,261 (12.0)	4,313 (2.4)	1,337 (0.8)	17,487 (9.9)
C—Sault							
Algoma	No.	111,408 (100.0)	79,449 (71.3)	12,323 (11.1)	4,144 (3.7)	1,747 (1.6)	13,376 (12.0)
Total, Northeastern Ontario Region	No.	505,651 (100.0)	369,456 (73.1)	67,782 (13.4)	16,376 (3.2)	4,956 (1.0)	45,422 (9.0)
Total, Ontario	No.	6,236,092 (100.0)	4,305,288 (69.0)	577,647 (9.3)	501,073 (8.0)	81,463 (1.3)	722,595 (11.6)

Note: Due to rounding, percentages may not add to 100.0.

POPULATION BY AGE GROUPS,
DISTRICTS, NORTHEASTERN ONTARIO REGION, 1951 AND 1961

	Total	0-4	5-9	10-14	15-19	20-24	25-34	35-44	45-54	55-64	65-69	70+	Median Age
A—Clay Belt													
Cochrane.....	1951	No.	83,850	11,390	9,698	8,294	6,941	6,699	12,587	10,753	9,061	5,100	1,668
		%	(100.0)	(13.6)	(11.6)	(9.9)	(8.3)	(8.0)	(15.0)	(12.8)	(10.8)	(6.1)	(2.0)
1961	No.	95,666	13,587	12,113	10,590	7,961	6,458	13,091	11,495	8,728	6,972	3,946	2,725
	%	(100.0)	(14.2)	(12.7)	(11.1)	(8.3)	(6.8)	(13.7)	(12.0)	(9.1)	(7.3)	(2.0)	(2.8)
Nipissing.....	1951	No.	50,517	6,850	5,869	4,997	4,511	3,784	7,288	6,049	4,503	3,562	1,319
		%	(100.0)	(13.6)	(11.6)	(9.9)	(8.9)	(7.5)	(14.4)	(12.0)	(8.9)	(7.1)	(2.6)
1961	No.	70,568	10,156	8,944	7,695	5,732	4,825	9,659	8,677	6,248	4,272	1,709	2,651
	%	(100.0)	(14.4)	(12.7)	(10.9)	(8.1)	(6.8)	(13.7)	(12.3)	(8.9)	(6.1)	(2.4)	(3.8)
Timiskaming.....	1951	No.	50,016	6,777	5,538	4,954	4,040	3,355	7,208	6,859	5,035	3,209	1,363
		%	(100.0)	(13.5)	(11.1)	(9.9)	(8.1)	(6.7)	(14.4)	(13.7)	(10.1)	(6.4)	(2.7)
1961	No.	50,971	6,677	6,089	5,756	4,258	3,338	6,203	5,908	5,325	3,878	1,288	2,251
	%	(100.0)	(13.1)	(11.9)	(11.3)	(8.4)	(6.5)	(12.2)	(11.6)	(10.4)	(7.6)	(2.5)	(4.4)
Sub-total.....	1951	No.	184,383	25,017	21,105	18,245	15,492	13,838	27,083	23,661	18,599	11,871	4,350
		%	(100.0)	(13.6)	(11.4)	(9.9)	(8.4)	(7.5)	(14.7)	(12.8)	(10.1)	(6.4)	(2.4)
1961	No.	217,205	30,420	27,146	24,041	17,951	14,621	28,953	26,080	20,301	15,122	4,943	7,627
	%	(100.0)	(14.0)	(12.5)	(11.1)	(8.3)	(6.7)	(13.3)	(12.0)	(9.3)	(7.0)	(2.3)	(3.5)

B—Nickel Range

Manitoulin

1951	No.	11,214	1,411	1,305	1,174	935	773	1,270	1,338	1,167	840	391	610	25.1
	%	(100.0)	(12.6)	(11.6)	(10.5)	(8.3)	(6.9)	(11.3)	(11.9)	(10.4)	(7.5)	(3.5)	(5.4)	
1961	No.	11,176	1,415	1,394	1,287	949	575	1,168	1,141	1,125	1,011	392	719	24.7
	%	(100.0)	(12.7)	(12.5)	(11.5)	(8.5)	(5.1)	(10.5)	(10.2)	(10.1)	(9.0)	(3.5)	(6.4)	

Sudbury

1951	No.	109,590	15,308	12,280	10,295	8,501	9,500	19,105	15,372	9,567	5,622	1,875	2,165	24.4
	%	(100.0)	(14.0)	(11.2)	(9.4)	(7.8)	(8.7)	(17.4)	(14.0)	(8.7)	(5.1)	(1.7)	(2.0)	
1961	No.	165,862	24,771	21,834	17,419	12,655	12,003	24,992	22,439	15,071	8,556	2,496	3,586	22.6
	%	(100.0)	(14.9)	(13.2)	(10.5)	(7.7)	(7.2)	(15.1)	(13.5)	(9.1)	(5.2)	(1.5)	(2.2)	

Sub-total

1951	No.	120,804	16,719	13,585	11,469	9,436	10,273	20,375	16,710	10,734	6,462	2,266	2,775	24.5
	%	(100.0)	(13.8)	(11.2)	(9.5)	(7.8)	(8.5)	(16.9)	(13.8)	(8.9)	(5.3)	(1.9)	(2.3)	
1961	No.	177,038	26,186	23,228	18,706	13,644	12,578	26,160	23,580	16,196	9,567	2,888	4,305	22.7
	%	(100.0)	(14.8)	(13.1)	(10.6)	(7.7)	(7.1)	(14.8)	(13.3)	(9.1)	(5.4)	(1.6)	(2.4)	

C—Sault

Algoma

1951	No.	64,496	8,056	6,610	5,590	5,212	5,232	10,151	8,523	6,163	4,568	1,874	2,517	26.5
	%	(100.0)	(12.5)	(10.2)	(8.7)	(8.1)	(8.1)	(15.7)	(13.2)	(9.6)	(7.1)	(2.9)	(3.9)	
1961	No.	111,408	16,507	13,877	11,416	8,079	7,895	17,492	14,748	10,082	5,888	2,022	3,402	23.7
	%	(100.0)	(14.8)	(12.5)	(10.2)	(7.3)	(7.1)	(15.7)	(13.2)	(9.0)	(5.3)	(1.8)	(3.1)	

Total, Northeastern Ontario Region

1951	No.	369,683	49,792	41,300	35,304	30,140	29,343	57,609	48,894	35,496	22,901	8,490	10,414	24.8
	%	(100.0)	(13.5)	(11.2)	(9.5)	(8.2)	(7.9)	(15.6)	(13.2)	(9.6)	(6.2)	(2.3)	(2.8)	
1961	No.	505,651	73,113	64,251	54,163	39,674	35,094	72,605	64,408	46,579	30,577	9,853	15,334	23.1
	%	(100.0)	(14.5)	(12.7)	(10.7)	(7.8)	(6.9)	(14.4)	(12.7)	(9.2)	(6.0)	(1.9)	(3.0)	

POPULATION BY ETHNIC GROUPS,
DISTRICTS, NORTHEASTERN ONTARIO REGION, 1961

		Total	British Isles	French	Finnish	German	Italian	Polish	Scandinavian	Ukrainian	Native Indian and Eskimo	All Other
A—Clay Belt												
Cochrane	1951	No.	83,850 (100.0)	27,102 (32.3)	39,569 (47.2)	2,408 (2.9)	1,214 (1.4)	2,596 (3.1)	1,822 (2.2)	1,030 (1.2)	1,825 (2.2)	1,322 (1.6)
	%	No.	95,666 (100.0)	27,219 (28.5)	47,539 (49.7)	2,340 (2.4)	2,099 (2.2)	3,539 (3.7)	2,239 (2.3)	1,100 (1.1)	1,637 (1.1)	2,224 (1.7)
	1961	No.	95,666 (100.0)	27,219 (28.5)	47,539 (49.7)	2,340 (2.4)	2,099 (2.2)	3,539 (3.7)	2,239 (2.3)	1,100 (1.1)	1,637 (1.1)	2,224 (1.7)
Nipissing.....	1951	No.	50,517 (100.0)	20,233 (40.1)	23,999 (47.5)	1,87 (0.4)	1,200 (2.4)	1,139 (2.3)	769 (1.5)	412 (0.8)	332 (0.7)	776 (1.5)
	%	No.	70,568 (100.0)	28,951 (41.0)	30,793 (43.6)	312 (0.4)	2,351 (3.3)	1,973 (2.8)	950 (1.3)	756 (1.1)	514 (0.7)	996 (1.4)
	1961	No.	70,568 (100.0)	28,951 (41.0)	30,793 (43.6)	312 (0.4)	2,351 (3.3)	1,973 (2.8)	950 (1.3)	756 (1.1)	514 (0.7)	996 (1.4)
Timiskaming....	1951	No.	50,016 (100.0)	26,726 (53.4)	13,999 (27.8)	974 (1.9)	1,208 (2.4)	692 (1.4)	1,441 (2.9)	909 (1.8)	1,083 (2.2)	214 (0.4)
	%	No.	50,971 (100.0)	24,046 (47.2)	15,637 (30.7)	883 (1.7)	1,720 (3.4)	964 (1.9)	1,405 (2.8)	766 (1.5)	848 (1.7)	212 (0.4)
	1961	No.	50,971 (100.0)	24,046 (47.2)	15,637 (30.7)	883 (1.7)	1,720 (3.4)	964 (1.9)	1,405 (2.8)	766 (1.5)	848 (1.7)	212 (0.4)
Sub-total.....	1951	No.	184,383 (100.0)	74,061 (40.2)	77,477 (42.0)	3,569 (1.9)	3,622 (2.0)	4,427 (2.4)	4,032 (2.2)	2,351 (1.3)	3,240 (1.8)	2,312 (1.3)
	%	No.	217,205 (100.0)	80,216 (36.9)	93,989 (43.3)	3,535 (1.6)	6,170 (2.8)	6,476 (3.0)	4,594 (2.1)	2,622 (1.2)	2,999 (1.4)	3,432 (1.6)
	1961	No.	217,205 (100.0)	80,216 (36.9)	93,989 (43.3)	3,535 (1.6)	6,170 (2.8)	6,476 (3.0)	4,594 (2.1)	2,622 (1.2)	2,999 (1.4)	3,432 (1.6)

B — Nickel Range									
Manitoulin	No.	11,214	7,690	515	121	5	14	26	27
	%	(100.0)	(68.6)	(4.6)	(0.1)	(0.1)	(0.1)	(0.2)	(0.2)
1961	No.	11,176	6,985	553	17	213	18	41	67
	%	(100.0)	(62.5)	(4.9)	(0.2)	(1.9)	(0.2)	(0.4)	(0.6)
Sudbury	No.	109,590	38,848	44,683	5,411	2,375	4,670	2,006	1,047
	%	(100.0)	(35.4)	(40.8)	(4.9)	(2.2)	(4.3)	(1.8)	(1.0)
1961	No.	165,862	55,429	65,129	7,446	6,351	9,020	3,571	1,859
	%	(100.0)	(33.4)	(39.3)	(4.5)	(3.8)	(5.4)	(2.2)	(1.1)
Sub-total	No.	120,804	46,538	45,198	5,417	2,496	4,675	2,020	1,073
	%	(100.0)	(38.5)	(37.4)	(4.5)	(2.1)	(3.9)	(1.7)	(0.9)
1961	No.	177,038	62,414	65,682	7,463	6,564	9,038	3,612	1,926
	%	(100.0)	(35.3)	(37.1)	(4.2)	(3.7)	(5.1)	(2.0)	(1.1)
C — Sault									
Algoma	No.	64,496	35,278	10,858	2,014	1,427	4,959	1,131	1,111
	%	(100.0)	(54.7)	(16.8)	(3.1)	(2.2)	(7.7)	(1.8)	(1.7)
1961	No.	111,408	52,839	21,394	3,089	5,050	11,006	2,325	2,031
	%	(100.0)	(47.4)	(19.2)	(2.8)	(4.5)	(9.9)	(2.1)	(1.8)
Total, Northeastern Ontario Region	No.	369,683	155,877	133,533	11,000	7,545	14,061	7,183	4,535
	%	(100.0)	(42.2)	(36.1)	(3.0)	(2.0)	(3.8)	(1.9)	(1.2)
1961	No.	505,651	195,469	181,045	14,087	17,784	26,520	10,531	6,579
	%	(100.0)	(38.7)	(35.8)	(2.8)	(3.5)	(5.2)	(2.1)	(1.3)

*Less than 0.05 per cent.

Note: Due to rounding, percentages may not add to 100.0.

POPULATION

POPULATION BY OFFICIAL LANGUAGE,
DISTRICTS, NORTHEASTERN ONTARIO REGION, 1961

		Total	English Only	French Only	English and French	Neither English nor French
A — Clay Belt						
Cochrane.....	No.	95,666	45,603	15,537	32,488	2,038
	%	(100.0)	(47.7)	(16.2)	(34.0)	(2.1)
Nipissing.....	No.	70,568	41,594	6,168	22,277	529
	%	(100.0)	(58.9)	(8.7)	(31.6)	(0.7)
Timiskaming.....	No.	50,971	35,210	4,005	11,397	359
	%	(100.0)	(69.1)	(7.9)	(22.4)	(0.7)
Sub-total.....	No.	217,205	122,407	25,710	66,162	2,926
	%	(100.0)	(56.4)	(11.8)	(30.5)	(1.3)
B — Nickel Belt						
Manitoulin.....	No.	11,176	10,814	19	126	217
	%	(100.0)	(96.8)	(0.2)	(1.1)	(1.9)
Sudbury.....	No.	165,862	102,248	10,993	49,851	2,770
	%	(100.0)	(61.6)	(6.6)	(30.1)	(1.7)
Sub-total.....	No.	177,038	113,062	11,012	49,977	2,987
	%	(100.0)	(63.9)	(6.2)	(28.2)	(1.7)
C — Sault						
Algoma.....	No.	111,408	92,524	2,518	13,804	2,562
	%	(100.0)	(83.0)	(2.3)	(12.4)	(2.3)
Total, Northeastern Ontario Region						
Ontario.....	No.	505,651	327,993	39,240	129,943	8,475
	%	(100.0)	(64.9)	(7.8)	(25.7)	(1.7)
Total, Ontario.....	No.	6,236,092	5,548,766	95,236	493,270	98,820
	%	(100.0)	(89.0)	(1.5)	(7.9)	(1.6)

Note: Due to rounding, percentages may not add to 100.0.
 Persons indicated as using "English Only" or "French Only" as an official language, may also speak other languages and have a mother tongue other than English or French. "Mother tongue" refers to the language a person first learned in childhood and still understands.

POPULATION BY RELIGIOUS DENOMINATION,
DISTRICTS, NORTHEASTERN ONTARIO REGION, 1961

		Total	Anglican Church of Canada	Roman Catholic	United Church of Canada	Other
A—Clay Belt						
Cochrane.....	No.	95,666	9,026	63,349	13,767	9,524
	%	(100.0)	(9.4)	(66.2)	(14.4)	(10.0)
Nipissing.....	No.	70,568	7,322	42,610	13,852	6,784
	%	(100.0)	(10.4)	(60.4)	(19.6)	(9.6)
Timiskaming.....	No.	50,971	5,764	23,503	13,207	8,497
	%	(100.0)	(11.3)	(46.1)	(25.9)	(16.7)
Sub-total.....	No.	217,205	22,112	129,462	40,826	24,805
	%	(100.0)	(10.2)	(59.6)	(18.8)	(11.4)
B—Nickel Range						
Manitoulin.....	No.	11,176	1,274	3,757	4,634	1,511
	%	(100.0)	(11.4)	(33.6)	(41.5)	(13.5)
Sudbury.....	No.	165,862	13,369	102,764	25,684	24,045
	%	(100.0)	(8.1)	(62.0)	(15.5)	(14.5)
Sub-total.....	No.	177,038	14,643	106,521	30,318	25,556
	%	(100.0)	(8.3)	(60.2)	(17.1)	(14.4)
C—Sault						
Algoma.....	No.	111,408	12,734	50,337	28,507	19,830
	%	(100.0)	(11.4)	(45.2)	(25.6)	(17.8)
Total, Northeastern Ontario Region..	No.	505,651	49,489	286,320	99,651	70,191
	%	(100.0)	(9.8)	(56.6)	(19.7)	(13.9)
Total, Ontario.....	No.	6,236,092	1,117,862	1,873,110	1,640,564	1,604,556
	%	(100.0)	(17.9)	(30.0)	(26.3)	(25.7)

Note: Due to rounding, percentages may not add to 100.0.

BIRTHS, MARRIAGES AND DEATHS,
DISTRICTS, NORTHEASTERN ONTARIO REGION, 1951 AND 1961 TO 1964

	Live Births				Marriages				Deaths	
			Rate per 1,000 Population				Rate per 1,000 Population			
	No.	Rate per 1,000 Population	No.	Rate per 1,000 Population	No.	Rate per 1,000 Population	No.	Rate per 1,000 Population	No.	Rate per 1,000 Population
A—Clay Belt										
Cochrane.....	1951	2,547	30.4	738	8.8	694	8.3			
	1961	2,914	30.5	701	7.3	681	7.1			
1962		2,984	30.5	658	6.7	727	7.4			
1963		2,859	28.5	711	7.1	738	7.4			
1964		2,706	27.0	656	6.5	691	6.9			
Nipissing.....	1951	1,610	31.9	450	8.9	456	9.0			
	1961	2,196	31.1	535	7.6	493	7.0			
1962		2,145	30.1	515	7.2	485	6.8			
1963		2,199	29.8	533	7.2	566	7.7			
1964		2,044	27.3	537	7.2	507	6.8			
Timiskaming.....	1951	1,362	27.2	355	7.1	407	8.1			
	1961	1,351	26.5	350	6.9	462	9.1			
1962		1,294	25.8	354	7.1	426	8.5			
1963		1,291	25.8	342	6.8	457	9.1			
1964		1,210	24.7	361	7.4	400	8.2			
Sub-total.....	1951	5,519	29.9	1,543	8.4	1,557	8.4			
	1961	6,461	29.7	1,586	7.3	1,636	7.5			
1962		6,423	29.3	1,527	7.0	1,638	7.5			
1963		6,349	28.3	1,586	7.1	1,761	7.9			
1964		5,960	26.6	1,554	6.9	1,598	7.1			
B—Nickel Range										
Manitoulin.....	1951	309	27.6	71	6.3	115	10.3			
	1961	306	27.4	78	7.0	107	9.6			
1962		268	24.1	84	7.6	96	8.6			
1963		268	24.1	59	5.3	123	11.1			
1964		248	22.5	84	7.6	106	9.6			

Sudbury	1951	3,706	33.8	1,048	9.6	703	6.4
	1961	5,395	32.5	1,217	7.3	904	5.5
	1962	5,363	31.7	1,162	6.9	1,030	6.1
	1963	4,850	28.8	1,147	6.8	1,014	6.0
	1964	4,427	26.7	1,070	6.5	973	5.9
Sub-total	1951	4,015	33.2	1,119	9.3	818	6.8
	1961	5,701	32.2	1,295	7.3	1,011	5.7
	1962	5,631	31.2	1,246	6.9	1,126	6.2
	1963	5,118	28.5	1,206	6.7	1,137	6.3
	1964	4,675	26.5	1,154	6.5	1,079	6.1
C—Sault	1951	1,806	28.0	605	9.4	556	8.6
Algoma	1961	3,544	31.8	682	6.1	760	6.8
	1962	3,449	30.4	702	6.2	787	6.9
	1963	3,316	28.8	706	6.1	711	6.2
	1964	3,234	28.3	820	7.2	717	6.3
Total, Northeastern Ontario Region	1951	11,340	30.7	3,267	8.8	2,931	7.9
	1961	15,706	31.1	3,563	7.0	3,407	6.7
	1962	15,503	30.2	3,475	6.8	3,551	6.9
	1963	14,783	28.5	3,498	6.7	3,609	7.0
	1964	13,869	26.9	3,528	6.8	3,394	6.6
Total, Ontario	1951	114,827	25.0	45,198	9.8	43,981	9.6
	1963	155,089	24.1	45,306	7.0	53,617	8.3
	1964	152,729	23.2	48,501	7.4	52,204	7.9

Note: Births are shown by place of residence of mothers, marriages by place of occurrence and deaths by place of residence.

POPULATION, PARTICIPATION RATES AND LABOUR FORCE,
NORTHEASTERN ONTARIO REGION AND PROVINCE OF ONTARIO,
1961, 1971, 1976, 1981 AND 1986

	1961			1971			1976			1981			1986		
	Pop.	P.R.		L.F.	P.R.		L.F.	P.R.		L.F.	P.R.		L.F.	P.R.	
		(000's)	%		(000's)	%		(000's)	%		(000's)	%		(000's)	%
Northeastern Ontario Region															
Male															
15-24	38,208	59.1	22,585	61.4	55	33.8	71.2	55	39.2	78.6	53	41.7	87.5	50	43.8
25-44	72,013	94.7	68,196	79.7	94	74.9	90.4	94	85.0	106.4	94	100.0	127.1	94	119.5
45-64	42,674	87.8	37,474	58.7	87	51.1	66.9	86	57.5	72.7	86	62.5	76.5	85	65.0
65+	13,706	25.4	3,487	19.7	23	4.5	23.3	20	4.7	28.0	20	5.6	32.8	20	6.6
Total	166,601	79.1	131,742	219.5	75	164.3	251.8	74	186.4	285.7	73	209.8	323.9	73	234.9
Female															
15-24	36,560	32.5	11,871	58.7	31	18.2	68.3	30	20.5	75.3	30	22.6	83.7	29	24.3
25-44	65,000	22.6	14,667	72.0	24	17.3	81.5	25	20.4	96.0	25	24.0	114.7	25	28.7
45-64	34,482	23.6	8,130	47.4	26	12.3	54.0	27	14.6	58.7	28	16.4	61.8	28	17.3
65+	11,481	5.5	628	17.4	6	1.0	20.7	6	1.2	24.7	6	1.5	29.1	6	1.7
Total	147,523	23.9	35,296	195.5	25	48.8	224.5	25	56.7	254.7	25	64.5	289.3	25	72.0
Males and Females															
15-24	74,768	46.1	34,456	120.1	43	52.0	139.5	43	59.7	153.9	42	64.3	171.2	40	68.1
25-44	137,013	60.5	82,863	151.7	61	92.2	171.9	61	105.4	202.4	61	124.0	241.8	61	148.2
45-64	77,156	59.1	45,604	106.1	60	63.4	120.9	60	72.1	131.4	60	78.9	138.3	60	82.3
65+	25,187	16.3	4,115	37.1	15	5.5	-44.0	13	5.9	52.7	13	7.1	61.9	13	8.3
Total	314,124	53.2	167,038	415.0	51	213.1	476.3	51	243.1	540.4	51	274.3	613.2	50	306.9

Province of Ontario										
	Male		Female							
Male										
15-24	413,427	62.9	259,911	59	398.3	761.9	59	445.9	828.6	56
25-44	880,244	95.9	843,933	921.7	95	875.7	1,023.7	95	1,186.2	95
45-64	580,612	90.2	523,605	744.5	89	664.0	821.1	88	725.2	863.3
65+	231,765	31.5	73,118	290.7	28	81.4	330.5	25	82.6	378.2
Total	2,106,048	80.7	1,700,567	2,630.9	77	2,019.4	2,937.2	76	2,226.2	3,256.3
Female										
15-24	410,422	42.4	173,876	645.0	40	260.4	729.2	40	288.3	794.5
25-44	866,795	35.0	303,706	912.3	38	342.3	1,008.9	39	389.1	1,160.8
45-64	566,770	34.2	193,886	756.5	38	284.2	838.4	39	328.7	886.6
65+	276,308	7.6	20,980	364.0	8	29.1	415.5	8	33.2	477.5
Total	2,122,295	32.6	692,448	2,677.8	34	916.0	2,992.0	35	1,039.3	3,319.4
Males and Females										
15-24	823,849	52.7	433,787	1,319.0	50	658.7	1,491.1	49	734.2	1,623.1
25-44	1,749,039	65.6	1,147,659	1,834.0	66	1,218.0	2,032.6	67	1,361.6	2,347.0
45-64	1,147,382	62.5	717,491	1,501.0	63	948.2	1,659.5	64	1,053.9	1,749.9
65+.....	508,073	18.5	94,098	654.7	17	110.5	746.0	16	115.8	855.7
Total	4,228,343	56.6	2,393,015	5,308.6	55	2,935.4	5,929.2	55	3,265.5	6,557.5

Assumption: Net migration to Ontario 30,000 per annum.
Net internal migration 5,000 per annum.

LABOUR FORCE¹ BY INDUSTRY DIVISIONS, DISTRICTS,
NORTHEASTERN ONTARIO REGION, 1951 AND 1961

		1951						1961						
		All Industries	Agriculture	Forestry	Fishing and Trapping	Mining, Quarries and Oil	Manufacturing	Construction	Trade	Transportation, Communication and Other Utilities	Community, Business and Personal Service Industries ²	Finance, Insurance and Real Estate	Public Administration and Defence	Industry not Stated
A—Clay Belt														
Cochrane.....	No.	30,793	1,880	3,805	38	7,445	5,924	1,325	2,371	2,997	354	4,177	—	477
	%	(100.0)	(6.1)	(12.4)	(0.1)	(24.2)	(19.2)	(4.3)	(7.7)	(9.7)	(1.1)	(13.6)	—	(1.5)
1961	No.	31,169	754	3,345	20	6,480	4,225	2,211	2,682	3,816	507	4,962	1,110	1,057
	%	(100.0)	(2.4)	(10.7)	(0.1)	(20.8)	(13.6)	(7.1)	(8.6)	(12.2)	(1.6)	(15.9)	(3.6)	(3.4)
Nipissing.....	No.	17,293	1,518	1,013	24	171	3,272	1,877	3,384	2,174	276	3,319	—	265
	%	(100.0)	(8.8)	(5.9)	(0.1)	(1.0)	(18.9)	(10.9)	(19.6)	(12.6)	(1.6)	(19.2)	—	(1.5)
1961	No.	22,192	925	927	18	244	3,345	1,483	3,566	3,300	508	4,863	2,283	730
	%	(100.0)	(4.2)	(4.2)	(0.1)	(1.1)	(15.1)	(6.7)	(16.1)	(14.9)	(2.3)	(21.9)	(10.3)	(3.3)
Timiskaming.....	No.	17,913	1,806	1,062	56	4,958	1,935	955	1,622	2,276	299	2,850	—	94
	%	(100.0)	(10.1)	(5.9)	(0.3)	(27.7)	(10.8)	(5.3)	(9.1)	(12.7)	(1.7)	(15.9)	—	(0.5)
1961	No.	16,585	1,092	752	2	4,123	1,442	682	1,863	2,321	323	2,837	638	510
	%	(100.0)	(6.6)	(4.5)	*	(24.9)	(8.7)	(4.1)	(11.2)	(14.0)	(1.9)	(17.1)	(3.8)	(3.1)
Sub-total.....	No.	65,999	5,204	5,880	118	12,574	11,131	4,157	7,377	7,447	929	10,346	—	836
1961	No.	69,946	2,771	5,024	40	10,847	9,012	4,276	8,111	9,437	1,338	12,662	4,031	2,297
	%	(100.0)	(4.0)	(1.6)	(0.1)	(12.9)	(15.5)	(6.3)	(11.6)	(13.5)	(1.9)	(18.1)	(5.8)	(3.3)

*Less than 0.05 per cent.

Excluded If no person seeking work who has never been employed

Excludes a few persons occupying work which have never been employed.

Due to roundin^g, some values do not add up to 100.0.

POPULATION, 15 YEARS AND OVER, IN AND NOT IN THE LABOUR FORCE,
DISTRICTS, NORTHEASTERN ONTARIO REGION, 1961

	Population 15 Years and Over			Labour Force ¹ 15 Years and Over			Labour Force 15 Years and Over as Percentage of Population 15 Years and Over		
	Male		Total	Male		Total	Male		Total
	Male No.	Female No.	No.	Male No.	Female No.	No.	Male No.	Female No.	No.
A—Clay Belt									
Cochrane.....	32,092	27,284	59,376	25,192	5,977	31,169	52.5		
Nipissing.....	22,537	21,236	43,773	16,899	5,293	22,192	50.7		
Timiskaming.....	17,025	15,424	32,449	13,020	3,565	16,585	51.1		
Sub-total.....	71,654	63,944	135,598	55,111	14,835	69,946	51.6		
B—Nickel Range									
Manitoulin.....	3,691	3,389	7,080	2,455	768	3,223	45.5		
Sudbury.....	54,374	47,464	101,838	43,887	11,367	55,254	54.3		
Sub-total.....	58,065	50,853	108,918	46,342	12,135	58,477	53.7		
C—Sault									
Algoma.....	36,882	32,726	69,608	30,289	8,326	38,615	55.5		
Total, Northeastern Ontario Region.....	166,601	147,523	314,124	131,742	35,296	167,038	53.2		
Percentage Distribution.....	(53.0)	(47.0)	(100.0)	(78.9)	(21.1)	(100.0)			

¹Excludes a few persons seeking work who have never been employed.

EMPLOYMENT, EARNINGS AND INCOME

INDEX NUMBERS OF EMPLOYMENT, AVERAGE WEEKLY WAGES AND SALARIES
IN MANUFACTURING AND MINING, NORTHEASTERN ONTARIO REGION,
1956 TO 1965

	Index Numbers of Employment		Average Weekly Wages and Salaries	
	Manufacturing (1949 = 100)	Mining	Manufacturing \$	Mining \$
A—Clay Belt				
1956.....	120.3	103.3	74.21	71.48
1957.....	127.0	103.7	77.68	74.53
1958.....	119.6	102.7	81.05	75.58
1959.....	121.2	101.4	82.27	77.08
1960.....	120.6	101.8	85.24	79.90
1961.....	117.4	98.7	87.58	83.02
1962.....	118.7	95.5	90.59	85.10
1963.....	119.7	92.8	92.07	87.04
1964.....	130.0	86.9	93.65	90.42
1965 ¹	128.3	88.0	97.39	97.12
B—Nickel Range				
1956.....	130.7	146.9	84.68	84.18
1957.....	132.7	151.2	90.53	91.08
1958.....	111.3	100.9	89.95	82.94
1959.....	125.2	143.9	92.64	98.73
1960.....	128.3	161.0	94.88	103.35
1961.....	125.9	161.4	97.44	105.92
1962.....	119.6	151.7	97.36	105.41
1963.....	106.9	127.9	101.37	107.42
1964.....	113.0	147.4	104.33	109.44
1965 ¹	123.6	169.7	108.68	112.65
C—Sault				
1956.....	130.1	351.0	83.20	91.51
1957.....	134.9	748.8	88.96	99.00
1958.....	125.2	1,312.1	92.43	103.43
1959.....	135.7	1,260.8	98.67	108.05
1960.....	129.2	857.7	100.97	112.06
1961.....	131.4	545.4	105.30	117.02
1962.....	136.4	484.7	107.89	113.33
1963.....	139.5	462.5	113.87	115.01
1964.....	146.3	396.3	113.33	115.73
1965 ¹	153.1	322.8	120.64	117.56
Total, Northeastern Ontario Region				
1956.....	126.2	127.1	81.41	78.20
1957.....	131.9	146.5	86.52	85.10
1958.....	118.6	157.4	88.46	87.90
1959.....	128.0	166.5	92.34	93.14
1960.....	126.5	153.2	94.54	94.73
1961.....	125.4	137.0	97.71	96.90
1962.....	125.2	129.3	99.53	96.71
1963.....	121.9	119.7	103.72	98.19
1964.....	126.1	118.4	103.44	101.03
1965 ¹	134.8	122.4	110.09	105.77
Total, Province of Ontario				
1956.....	116.2	128.0	70.11	78.08
1957.....	116.1	146.8	73.55	84.72
1958.....	109.3	155.9	76.29	87.77
1959.....	110.5	165.1	79.75	92.85
1960.....	107.5	156.4	82.13	95.00
1961.....	106.8	141.3	84.92	96.96
1962.....	112.3	134.5	87.63	97.26
1963.....	116.9	125.3	91.16	99.37
1964.....	123.7	123.8	94.86	102.39
1965 ¹	131.0	128.4	99.57	107.60

¹Preliminary Estimate.

EMPLOYMENT, EARNINGS AND INCOME

INDEX NUMBERS OF EMPLOYMENT, ALL INDUSTRIES,
SELECTED URBAN AREAS, NORTHEASTERN ONTARIO REGION, 1952 TO 1965
(1949=100)

	Sault Ste. Marie	Sudbury	Timmins
1952.....	130.1	130.7	n.a.
1953.....	136.0	134.8	n.a.
1954.....	102.8	134.2	n.a.
1955.....	115.0	131.0	n.o.
1956.....	129.7	137.9	n.a.
1957.....	137.2	143.3	n.a.
1958.....	139.6	116.2	n.a.
1959.....	146.8	138.1	94.1
1960.....	143.5	146.0	93.7
1961.....	139.2	147.4	91.3
1962.....	145.4	140.0	89.0
1963.....	150.0	125.7	88.3
1964.....	157.2	134.1	86.3
1965 (Prel.).....	162.2	148.0	87.1

AVERAGE WEEKLY WAGES AND SALARIES, ALL INDUSTRIES,
SELECTED URBAN AREAS, NORTHEASTERN ONTARIO REGION, 1952 TO 1965

	Sault Ste. Marie	Sudbury	Timmins
	\$	\$	\$
1952.....	63.76	67.57	n.a.
1953.....	66.97	71.93	n.a.
1954.....	67.08	72.73	n.a.
1955.....	71.30	75.41	n.a.
1956.....	80.26	78.83	n.a.
1957.....	85.29	83.97	n.a.
1958.....	87.42	79.46	n.a.
1959.....	92.78	87.20	66.32
1960.....	95.28	90.17	68.84
1961.....	99.65	92.32	71.15
1962.....	101.50	92.43	73.40
1963.....	112.99	94.35	74.55
1964.....	106.48	97.24	77.44
1965 (Prel.).....	111.53	101.58	82.15

n.a. Not available.

LABOUR INCOME OF THE NORTHEASTERN ONTARIO REGION,
DISTRICTS, 1957 TO 1963

	1957	1958	1959	1960	1961	1962	1963	% Change 1963/1957
	(Thousands of Dollars)							
A—Clay Belt								
Cochrane.....	91,001	91,780	87,007	96,066	98,414	103,719	105,599	16.0
Nipissing.....	52,219	57,074	57,714	62,511	61,195	69,012	72,371	38.6
Timiskaming.....	46,227	42,369	40,859	46,318	46,492	44,876	47,721	3.2
Sub-total.....	189,447	191,223	185,580	204,895	206,101	217,607	225,691	19.1
B—Nickel Range								
Manitoulin.....	4,760	3,666	3,866	4,612	3,641	4,511	5,563	16.9
Sudbury.....	183,394	155,864	192,011	203,877	209,643	206,699	197,830	7.9
Sub-total.....	188,154	159,530	195,877	208,489	213,284	211,210	203,393	8.1
C—Sault								
Algoma.....	133,213	156,523	162,496	152,035	145,026	151,746	161,339	21.1
Total, Northeastern Ontario Region.....	510,814	507,276	543,953	565,419	564,411	580,563	590,423	15.6
Total, Province of Ontario.....	6,287,152	6,602,979	6,991,020	7,408,189	7,751,686	8,145,201	8,717,216	38.7
Region as % of Province.....	8.1	7.7	7.8	7.6	7.3	7.1	6.8	

EMPLOYMENT, EARNINGS AND INCOME

LABOUR INCOME PER CAPITA OF LABOUR INCOME RECIPIENTS,
NORTHEASTERN ONTARIO REGION, DISTRICTS, 1957 TO 1963

	1957	1958	1959	1960	1961	1962	1963	% Change 1963/1957
	(Dollars)							
A—Clay Belt								
Cochrane.....	3,033	3,241	3,226	3,417	3,411	3,573	3,625	19.5
Nipissing.....	2,793	2,939	3,006	3,021	3,083	3,322	3,341	19.6
Timiskaming.....	2,813	2,877	2,874	3,144	3,163	3,054	3,228	14.8
Sub-total.....	2,909	3,061	3,073	3,225	3,251	3,374	3,442	18.3
B—Nickel Range								
Manitoulin.....	1,980	1,876	1,829	2,077	2,031	1,942	2,481	25.3
Sudbury.....	3,459	3,336	3,762	3,888	3,963	3,899	3,985	15.2
Sub-total.....	3,394	3,277	3,685	3,814	3,900	3,817	3,920	15.5
C—Sault								
Algoma.....	3,603	3,860	3,972	4,013	3,964	4,098	4,330	20.2
Total, Northeastern Ontario Region	3,243	3,344	3,522	3,623	3,649	3,701	3,816	17.7
Total, Province of Ontario	2,915	3,096	3,197	3,309	3,428	3,529	3,678	26.2

LABOUR INCOME OF THE NORTHEASTERN ONTARIO REGION, DISTRICTS, 1957 TO 1963,
PERCENTAGE DISTRIBUTION

	1957	1958	1959	1960	1961	1962	1963
A—Clay Belt							
Cochrane.....	17.8	18.1	16.0	17.0	17.4	17.9	17.9
Nipissing.....	10.2	11.2	10.6	11.0	10.9	11.9	12.3
Timiskaming.....	9.1	8.4	7.5	8.2	8.2	7.7	8.1
Sub-total.....	37.1	37.7	34.1	36.2	36.5	37.5	38.2
B—Nickel Range							
Manitoulin.....	0.9	0.7	0.7	0.8	0.7	0.8	0.9
Sudbury.....	35.9	30.7	35.3	36.1	37.1	35.6	33.5
Sub-total.....	36.8	31.4	36.0	36.9	37.8	36.4	34.5
C—Sault							
Algoma.....	26.1	30.9	29.9	26.9	25.7	26.1	27.3
Total, Northeastern Ontario Region	100.0						

**TAXPAYERS, INCOME AND AVERAGE INCOME, DISTRICTS AND SELECTED CENTRES,
NORTHEASTERN ONTARIO REGION, 1953, 1962 AND 1963**

	Number of Taxpayers						Total Income of Taxpayers						Average Income per Taxpayer											
	1953		1962		1963		\$1953		\$1962		\$1963		% Change 1963/1953		\$1953		\$1962		\$1963		% Change 1963/1953			
							(\$000's)	(\$000's)	(\$000's)	(\$000's)	(\$000's)	(\$000's)			\$	\$	\$	\$	\$	\$	%			
A—Clay Belt																								
Cochrane	17,980	23,660	23,842	32.6	59,549	103,171	104,117	74.8	3,312	4,361	4,367	31.9												
Timmins, Porcupine and Schumacher.	8,560	11,570	10,938	27.8	27,377	47,110	44,616	63.0	3,198	4,072	4,079	27.5												
Nipissing	9,370	15,829	17,025	81.7	31,126	69,260	75,085	141.2	3,322	4,376	4,410	32.8												
North Bay.	5,960	11,258	12,347	107.2	20,788	50,697	55,677	167.8	3,488	4,503	4,509	29.3												
Timiskaming	10,350	11,014	11,514	11.2	33,805	44,760	48,008	42.0	3,266	4,064	4,170	27.7												
Kirkland Lake	4,140	4,270	4,777	15.4	14,181	17,009	19,249	35.7	3,425	3,983	4,030	17.7												
Sub-total	37,700	50,503	52,381	38.9	124,480	217,191	227,210	82.5	3,302	4,301	4,338	31.4												
B—Nickel Range																								
Manitoulin	1,080	1,217	1,418	31.3	2,994	4,265	5,366	79.2	2,772	3,505	3,784	36.5												
Sudbury	36,260	45,093	42,141	16.2	133,466	211,550	199,531	49.5	3,681	4,691	4,735	28.6												
Sudbury and Copper Cliff	20,130	33,437	31,471	56.3	74,226	159,781	150,128	102.3	3,687	4,779	4,770	29.4												
Sub-total	37,340	46,310	43,559	16.7	136,460	215,815	204,897	50.2	3,655	4,660	4,704	28.7												
C—Sault																								
Algoma	20,270	31,079	32,169	58.7	73,826	155,359	165,644	124.4	3,642	4,999	5,149	41.4												
Sault Ste. Marie	15,950	22,237	22,243	39.5	59,452	113,181	118,214	98.8	3,727	5,090	5,315	42.6												
Total, Northeastern Ontario Region	95,310	127,892	128,109	34.4	334,766	588,365	597,751	78.6	3,512	4,600	4,666	32.9												
Total, Ontario	1,473,960	1,943,215	2,044,518	38.7	5,064,754	8,923,565	9,597,145	89.5	3,436	4,592	4,694	36.6												

**DISTRIBUTION OF INCOMES OF TAXPAYERS BY INCOME CLASSES,
DISTRICTS AND SELECTED CENTRES, NORTHEASTERN ONTARIO REGION, 1963**

		Under \$2,000	\$2,000- 3,999	\$3,000- 3,999	\$4,000- 4,999	\$5,000- 5,999	\$6,000- 9,999	\$10,000- and Over	Total
A—Clay Belt									
Cochrane.....	3,220	3,680	5,020	4,900	2,900	-	3,570	552	23,842
Timmins, Porcupine and Schumacher.....	1,420	1,880	2,880	2,580	1,060	900	218	10,938	
Nipissing.....	2,260	2,820	3,280	3,340	2,320	2,560	445	17,025	
North Bay.....	1,520	2,080	2,360	2,280	1,740	2,020	347	12,347	
Timiskaming.....	1,540	1,760	3,540	2,240	1,050	1,081	303	11,514	
Kirkland Lake.....	620	760	1,700	840	370	380	107	4,777	
Sub-total.....	7,020	8,260	11,840	10,480	6,270	7,211	1,300	52,381	
B—Nickel Range									
Manitoulin.....	260	360	320	140	200	120	18	1,418	
Sudbury.....	4,050	5,220	5,920	9,880	9,540	6,545	986	42,141	
Sudbury and Copper Cliff.....	3,000	3,980	4,280	7,200	7,400	4,843	768	31,471	
Sub-total.....	4,310	5,580	6,240	10,020	9,740	6,665	1,004	43,559	
C—Sault									
Algoma.....	3,640	3,600	4,000	4,700	5,600	9,461	1,168	32,169	
Sault Ste. Marie.....	2,500	2,360	2,460	3,140	3,820	7,001	962	22,243	
Total, Northeastern Ontario Region.....	14,970	17,440	22,080	25,200	21,610	23,337	3,472	128,109	
Total, Ontario.....	256,443	349,577	395,196	369,903	269,305	311,925	(2.7)	(100.0)	
	(12.5)	(17.1)	(19.3)	(18.1)	(13.2)	(15.3)	(4.5)	(100.0)	2,044,518

TOTAL INCOME OF FAMILIES BY SIZE OF INCOME, DISTRICTS AND INCORPORATED CENTRES OF 10,000 AND OVER FOR THE YEAR ENDED MAY 31, 1961,
NORTHEASTERN ONTARIO REGION

	Total	Under \$1,000-\$1,999	\$2,000-\$2,999	\$3,000-\$3,999	\$4,000-\$4,999	\$5,000-\$5,999	\$6,000-\$6,999	\$7,000-\$7,999	\$8,000-\$9,999	\$10,000-\$14,999	\$15,000 + Average ¹	\$
A—Clay Belt												
Cochrane	No.	19,339	782	1,202	1,696	3,353	2,939	2,694	2,027	1,316	1,269	798
%	No.	(100.0)	(4.0)	(6.2)	(8.8)	(17.3)	(20.4)	(13.9)	(10.5)	(6.8)	(6.6)	(4.1)
Timmins	No.	6,896	487	638	1,377	1,457	894	600	411	420	260	260
%	No.	(100.0)	(3.9)	(7.1)	(9.3)	(20.0)	(21.1)	(13.0)	(8.7)	(6.0)	(6.1)	(3.8)
Nipissing	No.	14,020	676	1,112	1,382	2,166	2,581	1,939	1,408	911	964	673
%	No.	(100.0)	(4.8)	(7.9)	(9.9)	(15.4)	(18.4)	(13.8)	(10.0)	(6.5)	(6.9)	(4.8)
North Bay.	No.	5,678	234	271	416	809	1,041	796	670	438	515	340
%	No.	(100.0)	(4.1)	(4.8)	(7.3)	(14.2)	(18.3)	(14.0)	(11.8)	(7.7)	(9.1)	(6.0)
Timiskaming	No.	10,095	525	907	938	2,208	2,027	1,289	903	451	391	297
%	No.	(100.0)	(5.2)	(9.0)	(9.3)	(21.9)	(20.1)	(12.8)	(8.9)	(4.5)	(3.9)	(2.9)
Sub-total	No.	43,454	1,983	3,221	4,016	7,727	8,547	5,922	4,338	2,678	2,624	1,768
%	No.	(100.0)	(4.6)	(7.4)	(9.2)	(17.8)	(19.7)	(13.6)	(10.0)	(6.2)	(6.0)	(4.1)
B—Nickel Range												
Sudbury	No.	35,046	1,202	1,516	1,810	3,530	6,400	7,698	4,406	2,841	2,985	1,916
%	No.	(100.0)	(3.4)	(4.3)	(5.2)	(10.1)	(18.3)	(22.0)	(12.0)	(8.1)	(8.5)	(5.5)
Sudbury	No.	18,196	459	599	845	1,625	3,327	3,836	2,289	1,679	1,841	1,172
%	No.	(100.0)	(2.5)	(3.3)	(4.6)	(8.9)	(18.3)	(21.1)	(12.6)	(9.2)	(10.1)	(6.4)
Manitoulin	No.	1,722	225	349	317	258	1,68	103	94	82	70	24
%	No.	(100.0)	(13.1)	(20.3)	(18.4)	(15.0)	(9.8)	(6.0)	(5.0)	(4.8)	(4.1)	(1.9)
Sub-total	No.	36,768	1,427	1,865	2,127	3,788	6,568	7,801	4,500	2,923	3,055	1,940
%	No.	(100.0)	(3.9)	(5.1)	(5.8)	(10.3)	(17.9)	(12.2)	(12.2)	(7.9)	(8.3)	(5.3)
C—Sault												
Algoma	No.	23,700	946	1,185	1,582	2,506	3,333	4,263	3,424	2,306	2,072	1,478
%	No.	(100.0)	(4.0)	(5.0)	(6.7)	(10.6)	(14.1)	(18.0)	(14.4)	(9.7)	(8.7)	(6.2)
Sault Ste. Marie	No.	10,290	276	397	660	1,017	1,381	1,841	1,464	956	1,093	819
%	No.	(100.0)	(2.7)	(3.9)	(6.4)	(9.9)	(13.4)	(17.9)	(14.2)	(9.3)	(10.6)	(8.0)
Total, Northeastern Ontario Region	No.	103,922	4,356	6,271	7,725	14,021	18,448	17,986	12,262	7,907	7,751	5,186
%	No.	(100.0)	(4.2)	(6.0)	(7.4)	(13.5)	(17.8)	(17.3)	(11.8)	(7.6)	(7.5)	(5.0)
Total, Ontario	No.	1,376,148	46,901	82,912	115,583	187,863	231,907	209,972	153,000	109,141	117,399	83,375
%	No.	(100.0)	(3.4)	(6.0)	(8.4)	(13.7)	(16.9)	(15.3)	(11.1)	(7.9)	(8.5)	(6.1)

¹Includes families without income.
²Estimate.

POPULATION 5 YEARS OF AGE AND OVER, NOT ATTENDING SCHOOL
BY HIGHEST GRADE ATTENDED,
DISTRICTS, NORTHEASTERN ONTARIO REGION, 1961

	Population 5 Years and Over	Total	No Schooling	Kinder- garten	Elementary		Secondary		University	3&4+	Degree	
					1-4	5+	1-2	3-4				
A—Clay Belt												
Cochrane.....	82,079	56,709	3,494	22	6,494	24,427	10,666	7,357	2,379	756	233	
(100.0)	(6.2)	(11.5)	*	(43.1)	(18.8)	(13.0)	(4.2)	(1.3)	(0.4)	(0.4)	(1.4)	
Nipissing.....	60,412	41,921	2,559	18	3,865	15,662	7,931	7,591	2,647	619	203	
(100.0)	(6.1)	(9.2)	*	(37.4)	(18.9)	(6.3)	(6.1)	(1.5)	(0.5)	(0.5)	(2.0)	
Timiskaming.....	44,294	30,984	1,951	4	2,632	13,573	5,768	4,366	1,670	400	136	
(100.0)	(6.3)	(6.5)	*	(43.8)	(18.6)	(14.1)	(5.4)	(1.3)	(0.4)	(0.4)	(1.6)	
Sub-total.....	186,785	129,614	8,004	44	12,991	53,662	24,365	19,314	6,696	1,775	572	
(100.0)	(6.2)	(10.0)	*	(41.4)	(18.8)	(14.9)	(5.2)	(1.4)	(0.4)	(0.4)	(1.7)	
B—Nickel Range												
Manitoulin.....	9,761	6,817	523	1	796	3,260	1,129	748	211	55	14	
(100.0)	(7.7)	(11.7)	*	(47.8)	(16.6)	(11.0)	(3.1)	(0.8)	(0.2)	(0.2)	(1.2)	
Sudbury.....	141,091	97,416	5,930	35	7,820	39,696	19,952	15,010	5,167	1,433	560	
(100.0)	(6.1)	(8.0)	*	(40.7)	(20.5)	(15.4)	(5.3)	(1.5)	(0.6)	(0.6)	(1.9)	
Sub-total.....	150,852	104,233	6,453	36	8,616	42,956	21,081	15,758	5,378	1,488	574	
(100.0)	(6.2)	(8.3)	*	(41.2)	(20.2)	(15.1)	(5.2)	(1.4)	(0.6)	(0.6)	(1.8)	
C—Sault												
Algoma.....	94,901	67,288	3,937	31	4,580	25,854	14,175	12,118	3,900	997	362	
(100.0)	(5.9)	(5.9)	*	(6.8)	(38.4)	(21.1)	(18.0)	(5.8)	(1.5)	(0.5)	(2.0)	
Total, Northeastern Ontario Region.....	432,538	301,135	18,394	111	26,187	122,472	59,621	47,190	15,974	4,260	1,508	
(100.0)	(6.1)	(8.7)	*	(40.7)	(19.8)	(15.7)	(5.3)	(1.4)	(0.5)	(0.5)	(1.8)	
Total, Ontario.....	5,495,899	4,030,555	156,340	1,429	205,547	1,480,269	850,477	763,737	331,686	79,097	28,969	132,904
(100.0)	(3.9)	*	(5.1)	(36.7)	(21.1)	(18.9)	(8.2)	(2.0)	(0.7)	(0.7)	(3.3)	

*Less than 0.05.

Note: Due to rounding, percentages may not add to 100.0.

POPULATION 5 YEARS OF AGE AND OVER, ATTENDING SCHOOL BY
HIGHEST GRADE ATTENDED,
DISTRICTS, NORTHEASTERN ONTARIO REGION, 1961

	Population 5 Years and Over	Total	Kinder- garten	Elementary			Secondary			University	
				1-4		5+	1-2		3-4	5	Degree
A—Clay Belt											
Cochrane	82,079	25,370	1,650 (100.0)	9,923 (6.5)	8,759 (39.1)	1,455 (34.5)	359 (11.4)	207 (5.7)	85 (1.4)	47 (0.8)	(0.3)
Nipissing	60,412	18,491	1,158 (100.0)	7,310 (6.3)	6,336 (39.5)	1,960 (34.3)	1,172 (10.6)	283 (6.3)	161 (1.5)	52 (0.9)	(0.3)
Timiskaming	44,294	13,310	346 (100.0)	5,277 (2.6)	4,734 (39.6)	1,597 (35.6)	939 (12.0)	237 (7.1)	111 (1.8)	32 (0.8)	(0.2)
Sub-total	186,785	57,171	3,154 (100.0)	22,510 (5.5)	19,829 (39.4)	6,442 (34.7)	3,566 (11.3)	879 (6.2)	479 (1.5)	169 (0.8)	(0.3)
B—Nickel Range											
Manitoulin....	9,761	2,944	47 (100.0)	1,222 (1.6)	1,098 (41.5)	342 (37.3)	169 (11.6)	39 (5.7)	11 (1.3)	7 (0.4)	(0.2)
Sudbury	141,091	43,675	2,252 (100.0)	17,956 (5.2)	14,504 (41.1)	4,819 (33.2)	2,745 (11.0)	639 (6.3)	442 (1.5)	171 (1.0)	(0.4)
Sub-total	150,852	46,619	2,299 (100.0)	19,178 (4.9)	15,602 (41.1)	5,161 (33.5)	2,914 (11.1)	678 (6.3)	453 (1.5)	178 (1.0)	(0.4)
C—Sault											
Algoma	94,901	27,613	1,340 (100.0)	11,736 (4.9)	9,216 (42.5)	2,972 (33.4)	1,596 (10.8)	387 (5.8)	212 (1.4)	85 (0.8)	(0.3)
Total, Northeastern Ontario Region	432,538	131,403	6,793 (100.0)	53,424 (5.2)	44,647 (40.7)	14,575 (34.0)	8,076 (11.1)	1,944 (6.1)	1,144 (1.5)	432 (0.9)	(0.3)
Total, Ontario	5,495,899	1,465,344	92,559 (100.0)	547,174 (6.3)	477,819 (37.3)	177,714 (32.6)	104,006 (12.1)	30,295 (7.1)	18,362 (2.1)	7,678 (1.3)	(0.5)

Note: Due to rounding, percentages may not add to 100.0.

ENROLMENT AND TEACHERS IN ELEMENTARY AND SECONDARY SCHOOLS
BY DISTRICTS, NORTHEASTERN ONTARIO REGION, SEPTEMBER, 1965

	Enrolment										Full-time Teachers			
	Elementary					Secondary					Elementary and Secondary			
	Public	R.C.	Separate	Total	Arts and Science	Business and Commerce	Science, Technology and Trades	Occupational	Other	Total	Elementary	Public Separate	Total	Secondary
A—Clay Belt														
Cochrane.....	8,266	15,685	23,951	2,744	933	659	222	53	4,611	28,562	302	542	844	238
Nipissing.....	6,842	10,936	17,778	2,780	852	888	297	54	4,871	22,649	245	379	624	264
Timiskaming.....	5,857	10,952	15,359	816	803	134	32	32	3,324	14,276	198	189	387	165
Sub-total.....	20,965	31,716	52,681	7,063	2,601	2,350	653	139	12,806	65,487	745	1,110	1,855	667
B—Nickel Range														
Manitoulin.....	1,255	191	1,446	610	—	—	—	—	610	2,056	47	7	54	31
Sudbury.....	17,150	24,938	42,088	4,966	2,331	2,239	577	95	10,208	52,296	613	844	1,457	513
Sub-total.....	18,405	25,129	43,534	5,576	2,331	2,239	577	95	10,818	54,352	660	851	1,511	544
C—Sault														
Algoma.....	15,220	10,503	25,723	2,936	2,004	1,277	345	33	6,595	32,318	523	334	857	330
Total, Northeastern Ontario Region..	54,590	67,348	121,938	15,575	6,936	5,866	1,575	267	30,219	152,157	1,928	2,295	4,223	1,541
Total, Ontario... ..	949,374	370,669	1,320,043	237,242	86,456	69,282	15,000	10,758	418,738	1,738,781	32,783	12,184	44,967	21,659

VOLUME AND VALUE OF MINERAL PRODUCTION, METALLICS,
DISTRICTS, NORTHEASTERN ONTARIO REGION, 1963 AND 1964

Cochrane	A—Clay Belt				B—Nickel Range				C—Sault				Total, Northeastern Ontario Region 1963	1964			
	Nipissing		Timiskaming		Manitoulin		Sudbury		Algoma								
	1963	1964	1963	1964	1963	1964	1963	1964	1963	1964							
Bismuth.	lb.	—	—	—	65	541	—	—	—	—	65	541	—	—			
Cobalt.	\$	—	—	—	146	703	—	—	2,101,080	2,131,027	—	—	1,156,732	2,212,016			
Copper.	lb.	15,403.535	20,344.452	7,337,772	7,342,051	55,652	80,989	—	—	4,295,732	4,121,535	—	—	4,409,262	4,259,215		
Gold.	oz.	8,822,152	6,795,047	2,359,795	2,458,925	42,304	73,476	—	—	246,148,748	284,364,340	9,708,367	8,822,017	279,723,556	321,178,871		
Iron Ore.	ton	992,790	981,195	945	1,063	593,953	507,036	—	—	77,164,503	94,228,159	3,039,252	2,946,554	87,427,947	106,502,161		
Molybdenum..	lb.	—	—	35,674	40,113	22,421,726	19,152,020	—	—	83,489	78,408	—	724	1,671,177	1,588,426		
Nickel.	\$	—	—	—	—	—	—	—	3,151,710	2,948,499	—	—	27,331	63,084,932	59,208,124		
Platinum Metals.	oz.	37,477,822	37,040,161	—	—	—	—	—	1,067,119	1,517,737	1,906,023	1,992,896	2,973,142	3,510,633	—	—	
Selenium.	lb.	—	—	—	—	—	—	—	13,974,400	21,527,091	18,182,248	18,481,871	32,156,648	40,008,962	—	—	
Silver.	oz.	178,561	221,876	21,441	21,594	5,149,411	5,392,038	—	—	—	—	—	—	11,393	—	—	
Tellurium.	lb.	247,128	310,626	29,674	30,232	7,126,785	7,548,855	—	—	357,649	376,238	—	—	295,417,336	321,097,283	—	—
Uranium.	lb.	—	—	—	—	—	—	—	22,385,055	25,404,117	—	—	245,049,411	265,168,517	—	—	
Zinc.	lb.	41,716	2707,142	—	—	—	—	—	50,082	51,350	—	—	357,649	376,238	—	—	
Total, Metals..	\$	42,552,599	44,529,436	2,425,084	2,529,270	29,728,094	26,937,651	—	—	11,660,495	11,414,329	11,660,495	11,414,329	50,082	51,350	—	—
Grand Total	\$	50,605,786	49,366,122	2,755,997	2,870,925	29,826,462	26,997,288	10,430	41,6,549	372,296,528	419,372,354	118,032,351	83,434,970	573,621,554	582,458,208	—	—
Per cent of Ontario	%	5.8	5.5	0.3	0.3	3.4	3.0	*	*	42.6	46.5	13.5	9.3	6.5.6	6.4.6	—	—
*Less than 0.05 per cent.															—	—	

GROSS VALUE OF MINERAL PRODUCTION BY CLASSES,
NORTHEASTERN ONTARIO REGION,
SELECTED YEARS 1945, 1955 AND 1958 TO 1964

	1945	1955	1958	1959	1960	1961	1962	1963	1964
(Thousands of Dollars)									
A—Clay Belt									
Cochrane									
Metallics.....	32,071	37,284	38,876	36,768	37,036	40,058	41,774	42,553	44,529
Non-Metallics.....	42	3,318	3,849	4,328	4,129	4,363	5,687	5,373	2,200
Structural Materials.....	489	994	757	1,049	1,827	2,202	3,563	2,681	2,637
Total.....	32,602	41,595	43,483	42,145	42,992	46,623	51,023	50,606	49,366
Nipissing									
Metallics.....	—	—	564	1,754	1,877	2,065	2,245	2,425	2,529
Non-Metallics.....	79	—	*	—	4	3	—	—	*
Structural Materials.....	7	197	240	157	1,939	232	282	331	342
Total.....	86	197	804	1,910	3,820	2,300	2,527	2,756	2,871
Timiskaming									
Metallics.....	20,177	37,990	37,824	38,032	38,781	34,011	30,966	29,728	26,938
Non-Metallics.....	12	69	95	64	70	17	7	7	16
Structural Materials.....	8	280	142	307	71	70	66	91	43
Total.....	20,197	38,339	38,061	38,403	38,922	34,097	31,038	29,826	26,997
B—Nickel Range									
Manitoulin									
Metallics.....	321	316	60	485	116	—	348	*	324
Non-Metallics.....	—	—	45	14	18	87	65	104	93
Structural Materials.....	321	316	105	499	134	87	413	104	417
Total.....	321	316	105	499	134	87	413	104	417
Sudbury									
Metallics.....	123,088	337,331	252,456	360,373	427,410	442,192	409,518	368,550	416,001
Non-Metallics.....	595	1,125	1,753	2,385	2,535	1,557	1,485	1,870	1,959
Structural Materials.....	—	1,206	811	1,012	1,702	1,581	2,178	1,876	1,412
Total.....	123,683	339,662	255,021	363,770	431,647	445,329	413,181	372,297	419,372

C - Results											
Algoma											
Metallics ...											
Non-Metallics	1,964	14,347	206,882	264,356	209,917	153,971	125,099	117,338	82,853		
Structural Materials	143	313	187	115	—	—	—	—	—		
Total	11	177	407	698	545	439	790	695	581		
Total	2,118	14,837	207,477	265,169	210,462	154,410	125,889	118,032	83,435		
Total, Northeastern Ontario Region											
Metallics ...											
Non-Metallics	177,301	426,952	536,603	701,282	715,020	672,297	609,602	560,594	572,851		
Structural Materials	1,192	5,140	5,945	7,376	6,855	5,939	7,526	7,251	4,499		
Total	515	2,853	2,403	3,237	6,102	4,610	6,944	5,777	5,108		
Total	179,008	434,945	544,951	711,895	727,976	682,846	624,072	573,622	582,458		

*Less than \$500.

Note: Due to rounding, figures may not add to totals.

AGRICULTURE

 NUMBER, AREA AND AVERAGE AREA OF FARMS,
 DISTRICTS, NORTHEASTERN ONTARIO REGION, 1951, 1956 AND 1961

		Farms No.	Area Acres	Average Area per Farm Acres
A—Clay Belt				
Cochrane.....	1951	2,198	333,405	152
	1956	1,772	300,767	170
	1961	900	187,166	208
% Change 1961/1951		-59.1	-43.9	36.8
Nipissing.....	1951	1,403	276,062	197
	1956	1,114	229,582	206
	1961	811	200,371	247
% Change 1961/1951		-42.2	-27.4	25.4
Timiskaming.....	1951	1,589	296,398	187
	1956	1,555	302,046	194
	1961	1,070	242,663	227
% Change 1961/1951		-32.7	-18.1	21.4
Sub-total.....	1951	5,190	905,865	175
	1956	4,441	832,395	187
	1961	2,781	630,200	227
% Change 1961/1951		-46.4	-30.4	29.7
B—Nickel Range				
Manitoulin.....	1951	956	290,154	304
	1956	988	282,106	286
	1961	728	279,725	384
% Change 1961/1951		-23.9	-3.6	26.3
Sudbury.....	1951	1,634	284,744	174
	1956	1,402	246,984	176
	1961	841	183,342	218
% Change 1961/1951		-48.5	-35.6	25.3
Sub-total.....	1951	2,590	574,898	222
	1956	2,390	529,090	221
	1961	1,569	463,067	295
% Change 1961/1951		-39.4	-19.5	32.9
C—Sault				
Algoma.....	1951	1,333	222,995	167
	1956	1,115	209,645	188
	1961	708	168,391	238
% Change 1961/1951		-46.9	-24.5	42.5
Total, Northeastern Ontario Region.....	1951	9,113	1,703,758	187
	1956	7,946	1,571,130	198
	1961	5,058	1,261,658	249
% Change 1961/1951		-44.5	-26.0	33.2

Note: In the 1961 Census, a farm is defined as an agricultural holding of one acre or more with sales of agricultural products during the past 12 months of \$50 or more. In the 1956 and 1951 Censuses, a farm was defined as a holding on which agricultural operations were carried out and which was (a) 3 acres or more in size or (b) from 1 to 3 acres in size and with agricultural production during the previous year valued at \$250 or more. The 1961 farm definition was more restrictive than the previous definition and some of the intercensal changes in the agricultural statistics for the 1956-1961 period were due to the change in farm definition. The 1961 definition was more restrictive mainly for the "3 acre or more" size group because a minimum of \$50 sales of agricultural products was required in the 1961 Census whereas in 1951 and 1956 no minimum production or sales level was required (in addition to the minimum size limit of 3 acres).

ALL CENSUS FARMS CLASSIFIED BY TENURE OF FARM OPERATOR,
DISTRICTS, NORTHEASTERN ONTARIO REGION, 1961

	<u>A—Clay Belt</u>		<u>B—Nickel Range</u>		<u>C—Sault</u>		<u>Total, Northeastern Ontario Region</u>
	<u>Cochrane</u>	<u>Nipissing</u>	<u>Timiskaming</u>	<u>Manitoulin</u>	<u>Sudbury</u>	<u>Algoma</u>	
Total Population ..	95,666	70,568	50,971	11,176	165,862	111,408	505,651
Population on Census Farms ..	5,320	5,187	5,559	2,975	4,429	5,292	28,762
% of Total Population ..	(5.6)	(7.4)	(10.9)	(26.6)	(2.7)	(4.8)	(5.7)
Total Number of Farms ..	900	811	1,070	728	841	708	5,058
Owner ..	810	739	926	607	748	588	4,418
Tenant ..	5	9	5	12	13	6	50
Part Owner, Part Tenant ..	81	62	132	104	78	109	566
Manager ..	4	1	7	5	2	5	24
Total Area of Farms (acres) ..	187,166	200,371	242,663	279,725	183,342	158,391	1,261,658
Owner ..	152,875	177,783	194,783	214,468	150,740	130,147	1,020,796
Tenant ..	1,244	1,241	695	2,014	2,100	641	7,935
Part Owner, Part Tenant ..	29,709	21,248	44,506	62,229	24,818	35,243	217,753
Manager ..	3,338	99	2,679	1,014	5,684	2,360	15,174
Total Area Owned! ..	175,498	192,444	225,912	255,765	170,828	155,613	1,177,060
Total Area Rented ..	11,668	7,927	16,751	22,960	12,514	12,778	84,598
Residence of All Farm Operators on Farm:							
Residing on Farm Operated, Total ..	873	806	1,041	700	831	703	4,954
9-12 months ..	848	785	1,018	681	821	690	4,843
5-8 months ..	13	13	12	13	5	10	66
1-4 months ..	12	8	11	6	5	3	45
Not Residing on Farm Operated ..	27	5	29	28	10	5	104

¹Includes area operated by manager.

AGRICULTURE

ALL CENSUS FARMS CLASSIFIED BY SIZE, AREA AND USE OF FARM LAND,
DISTRICTS, NORTHEASTERN ONTARIO REGION, 1961

	A—Clay Belt		B—Nickel Range		C—Sault		Total, Northeastern Ontario Region
	Cochrane	Nipissing	Timiskaming	Manitoulin	Sudbury	Algoma	
Total Number of Census Farms	900	811	1,070	728	841	708	5,058
Under 3 acres.....	7	5	3	3	7	6	31
3-9 acres.....	10	5	7	9	14	11	56
10-69 acres.....	44	26	41	26	45	48	230
70-129 acres.....	212	133	160	102	167	136	910
130-179 acres.....	274	146	387	38	253	136	1,234
180-259 acres.....	78	146	75	98	68	80	545
240-399 acres.....	181	226	263	199	203	189	1,261
400-559 acres.....	58	86	93	106	55	66	464
560-759 acres.....	23	29	31	73	19	25	200
760-1,119 acres.....	12	9	8	50	9	8	96
1,120-1,599 acres.....	1	—	2	15	—	2	20
1,600 acres and over.....	—	—	—	9	1	1	11
Total Land Area (acres)	33,431,680	4,838,400	3,773,440	1,016,320	11,557,120	12,364,800	66,981,760
Total Area of All Farms (acres)	187,166	200,371	242,663	279,725	183,342	168,391	1,261,658
% of Total Land.....	(0.6)	(4.1)	(6.4)	(27.5)	(1.6)	(1.4)	(1.9)
Improved Land Area.....	81,471	78,674	122,103	65,037	73,562	66,171	487,018
% of Farm Land.....	(43.5)	(39.3)	(50.3)	(23.3)	(40.1)	(39.3)	(38.6)
Under Crops ¹	54,161	53,285	94,427	48,518	43,721	44,048	338,160
Improved Pasture.....	21,807	21,566	22,388	13,365	13,617	17,915	120,658
Summer Fallow.....	1,079	634	1,294	688	1,464	1,280	6,439
Other Improved Land.....	4,424	3,189	3,994	2,466	4,760	2,928	21,761
Unimproved Land Area.....	105,695	121,697	120,560	214,688	109,780	102,220	774,640
Woodland Area.....	41,945	83,224	75,070	121,079	76,163	72,384	469,865
Other Unimproved Land.....	63,750	38,473	45,490	93,609	33,617	29,836	304,775
Average Area Per Farm.....	208	247	227	384	218	238	249

¹Includes field, vegetable, fruit and nursery crop land.

ALL CENSUS FARMS CLASSIFIED BY ECONOMIC CLASS OF FARM,
DISTRICTS, NORTHEASTERN ONTARIO REGION, 1961

	A—Clay Belt			B—Nickel Range			C—Sault			Total, Northeastern Ontario Region
	Cochrane	Nipissing	Timiskaming	Sub-total	Manitoulin	Sudbury	Sub-total	Algoma		
Total Number of Census Farms	900	811	1,070	2,781	728	841	1,569	708	5,058	
Commercial Farms, Total	357	461	577	1,395	497	349	846	404	2,645	
% of Total Farms.....	(39.7)	(56.8)	(53.9)	(50.2)	(68.3)	(41.5)	(53.9)	(57.1)	(52.3)	
Value of Products Sold of:										
\$25,000 and Over.....	1	2	2	5	8	3	11	—	16	
\$15,000-\$24,999.....	8	6	11	25	3	3	6	9	40	
\$10,000-\$14,999.....	26	19	19	64	12	14	26	30	120	
\$5,000- \$9,999.....	67	121	103	291	64	82	146	86	523	
\$3,750- \$4,999.....	32	66	66	164	63	54	118	43	324	
\$2,500- \$3,749.....	67	73	119	259	145	75	220	66	545	
\$1,200- \$2,499.....	156	174	257	587	202	118	320	170	1,077	
Other Farms, Total	543	350	493	1,386	231	492	723	304	2,413	
Small-scale Farms ¹										
Part-time Farms.....	164	104	177	445	78	155	233	95	773	
Other Small-scale Farms	107	126	113	346	76	111	187	86	619	
Residential and Other Small Farms ²	269	120	202	591	77	225	302	122	1,015	
Institutional Farms, etc.....	3	—	1	4	—	1	1	1	6	

¹Value of products sold of \$250-\$1,199.
²Value of products sold of less than \$250.

COMMERCIAL FARMS CLASSIFIED BY TYPE OF FARM, DISTRICTS, NORTHEASTERN ONTARIO REGION, 1961

	A—Clay Belt			B—Nickel Range			C—Sault			Total, Northeastern Ontario Region
	Cochrane	Nipissing	Timiskaming	Sub-total	Manitoulin	Sudbury	Sub-total	Algoma	Sub-total	
Total Number of Commercial Farms.....	357	461	577	1,395	497	349	846	404	2,645	
Dairy.....	191	262	309	762	41	189	230	156	1,148	
Cattle, Hogs, Sheep (excluding dairy farms)	66	103	148	317	397	61	458	176	951	
Poultry.....	29	12	25	66	15	30	45	25	136	
Wheat.....	—	—	—	—	—	—	—	—	—	
Small Grains (excluding wheat farms).....	—	3	3	6	—	2	2	1	9	
Field Crops, other than small grains.....	30	4	15	49	—	34	34	6	89	
Fruits and Vegetables.....	2	3	2	7	—	—	—	3	10	
Forestry.....	9	32	22	63	11	10	21	5	89	
Miscellaneous Specialty.....	2	3	5	10	5	8	13	1	24	
Mixed.....	28	39	48	115	28	15	43	31	189	
Livestock Combination.....	18	32	41	91	23	5	28	21	140	
Field Crops Combination.....	1	1	1	3	—	3	3	4	10	
Other Combinations.....	9	6	6	21	5	7	12	6	39	

**NUMBER OF LIVESTOCK ON FARMS,
DISTRICTS, NORTHEASTERN ONTARIO REGION, 1951, 1961, 1963 AND 1964**

		Horses	Cattle		Pigs	Sheep	Hens and Chickens
			Total	Milk			
A—Clay Belt							
Cochrane.....	1951	2,792	13,720	7,721	3,793	2,192	96,592
	1961	434	14,573	6,712	1,444	1,889	56,233
	1963	450	15,400	6,600	1,350	2,000	43,400
	1964	400	15,750	6,600	1,350	1,800	45,300
	% Change 1964/1951	-85.7	14.8	-14.5	-64.4	-17.9	-53.1
Nipissing.....	1951	2,175	15,588	8,910	5,241	2,483	68,532
	1961	573	18,075	9,532	2,537	1,148	41,640
	1963	500	18,450	9,000	2,800	950	34,600
	1964	500	19,330	9,100	2,500	1,000	33,800
	% Change 1964/1951	-77.0	24.0	2.1	-52.3	-59.7	-50.7
Timiskaming.....	1951	2,540	20,186	10,937	6,834	7,594	93,924
	1961	763	23,948	10,660	4,275	7,128	59,391
	1963	700	26,400	10,500	4,100	7,800	47,400
	1964	650	27,020	10,300	4,400	6,900	44,600
	% Change 1964/1951	-74.4	33.9	-5.8	-35.6	-9.1	-52.5
Sub-total.....	1951	7,507	49,494	27,568	15,868	12,269	259,048
	1961	1,770	56,596	26,904	8,256	10,165	157,264
	1963	1,650	60,250	26,100	8,250	10,750	125,400
	1964	1,550	62,100	26,000	8,250	9,700	123,700
	% Change 1964/1951	-79.4	25.5	-5.7	-48.0	-20.9	-52.3
B—Nickel Range							
Manitoulin.....	1951	1,902	19,323	5,765	5,965	14,022	53,949
	1961	600	24,364	5,187	4,125	13,862	36,414
	1963	500	25,500	4,000	4,600	14,000	31,200
	1964	500	26,270	3,900	4,700	13,600	31,700
	% Change 1964/1951	-73.7	36.0	-32.4	-21.2	-3.0	-41.2
Sudbury.....	1951	2,175	13,615	8,022	5,499	572	90,110
	1961	523	13,114	6,285	2,586	505	70,292
	1963	500	13,400	5,700	2,000	450	61,100
	1964	500	13,760	5,400	2,050	450	61,800
	% Change 1964/1951	-77.0	1.1	-32.7	-62.7	-21.3	-31.4
Sub-total.....	1951	4,077	32,938	13,787	11,464	14,594	144,059
	1961	1,123	37,478	11,472	6,711	14,367	106,706
	1963	1,000	38,900	9,700	6,600	14,450	92,300
	1964	1,000	40,030	9,300	6,750	14,050	93,500
	% Change 1964/1951	-75.5	21.5	-32.6	-41.1	-3.7	-35.1
C—Sault							
Algoma.....	1951	2,184	14,783	7,325	3,397	3,389	89,230
	1961	520	16,488	6,731	1,358	2,651	50,595
	1963	450	17,100	6,100	1,750	2,800	38,600
	1964	400	18,060	6,500	1,650	2,300	39,500
	% Change 1964/1951	-81.7	22.2	-11.3	-51.4	-32.1	-55.7
Total, Northeastern Ontario Region.....	1951	13,768	97,215	48,680	30,729	30,252	492,337
	1961	3,413	110,562	45,107	16,325	27,183	314,565
	1963	3,100	116,250	41,900	16,600	28,000	256,300
	1964	2,950	120,190	41,800	16,650	26,050	256,700
	% Change 1964/1951	-78.6	23.6	-14.1	-45.8	-13.9	-47.9

PRODUCTION OF CREAMERY BUTTER,
DISTRICTS, NORTHEASTERN ONTARIO REGION, 1951, 1961, 1963 AND 1964

	<u>1951</u>	<u>1961</u>	<u>1963</u>	<u>1964</u> (Preliminary)	<u>1964/1951</u>	<u>% Change 1964/1963</u>
A—Clay Belt						
Cochrane.....	240,384	227,228	234,678	351,982	46.4	50.0
Nipissing.....	695,466	717,609	694,193	666,255	— 4.2	— 4.0
Timiskaming	954,879	1,106,604	1,423,833	1,347,312	41.1	— 5.4
Sub-total.....	1,890,729	2,051,441	2,352,704	2,365,579	25.1	0.5
B—Nickel Range						
Manitoulin.....	747,911	515,753	526,924	538,524	—28.0	2.2
Sudbury.....	46,773	—	—	—	—100.0	—
Sub-total.....	794,684	515,753	526,924	538,524	—32.2	2.2
C—Sault						
Algoma.....	401,988	140,851	149,700	135,135	—66.4	— 9.7
Total, Northeastern Ontario Region.....	3,087,401	2,708,045	3,029,328	3,039,238	— 1.6	0.3

**ACREAGE, PRODUCTION AND FARM VALUE OF FIELD CROPS,
NORTHEASTERN ONTARIO REGION, 1951, 1961, 1963 AND 1964**

		Acres No.	Bushels No.	Farm Value \$
Hay				
	1951	281,830	457,500 ¹	9,245,300
	1961	236,986	420,600 ¹	6,579,000
	1963	235,600	403,200 ¹	7,585,500
	1964	238,600	362,100 ¹	7,878,300
Oats				
	1951	86,027	3,708,200	3,320,800
	1961	78,125	3,310,400	2,836,000
	1963	82,200	4,055,100	3,143,200
	1964	80,400	3,486,300	2,664,500
Potatoes				
	1951	5,795	1,090,900	1,784,600
	1961	3,183	804,200	1,104,400
	1963	3,100	859,500	1,057,800
	1964	3,100	884,600	1,899,300
Mixed Grains				
	1951	27,966	1,265,200	1,323,200
	1961	10,619	448,100	434,500
	1963	10,600	475,000	458,000
	1964	10,700	460,100	396,700
Barley				
	1951	7,344	264,900	326,900
	1961	2,932	92,800	107,400
	1963	2,900	110,400	121,900
	1964	3,250	117,700	134,900
Field Roots				
	1951	472	172,700	141,200
	1961	197	69,000	51,900
	1963	200	80,900	53,700
	1964	230	122,000	124,700
Spring Wheat				
	1951	3,908	87,700	192,600
	1961	1,519	31,400	48,800
	1963	1,450	35,000	59,900
	1964	1,560	40,100	69,900
Corn for Fodder				
	1951	919	7,670 ¹	38,440
	1961	563	5,400 ¹	33,598
	1963	590	5,750 ¹	38,200
	1964	660	7,100 ¹	46,450
Winter Wheat				
	1951	1,199	32,500	73,100
	1961	985	28,540	43,414
	1963	920	34,560	59,200
	1964	830	26,360	46,200
Other²				
	1951	2,165	44,160	79,380
	1961	536	11,342	16,002
	1963	520	14,710	21,610
	1964	520	14,610	20,840
All Field Crops³				
	1951	417,754		16,532,900
	1961	335,660		11,254,557
	1963	338,080		12,599,010
	1964	340,850		13,281,790

¹Tons.²Includes Rye, Buckwheat, Dry Peas, Corn for Husking and Flax.³Does not include Seeded Pasture.

**ACREAGE, PRODUCTION AND FARM VALUE OF FIELD CROPS,
DISTRICTS, NORTHEASTERN ONTARIO REGION, 1964**

	Acres No.	Bushels No.	Farm Value \$	A—Clay Belt		Nipissing		Timiskaming		C—Sault
				Acres No.	Bushels No.	Farm Value \$	Acres No.	Bushels No.	Farm Value \$	
Cochrane										
Winter Wheat.....	—	—	—	30	760	1,300	50	1,700	2,900	
Spring Wheat.....	230	5,800	10,000	180	4,700	8,300	600	15,600	26,800	
Oats.....	8,600	401,300	313,000	15,900	683,700	485,400	23,600	1,014,800	791,500	
Barley.....	300	10,200	12,100	400	14,200	16,200	1,400	50,400	57,500	
Mixed Grains.....	1,500	59,100	49,100	550	22,900	19,700	3,200	146,200	125,700	
Potatoes.....	800	232,800	551,700	400	147,600	261,300	350	102,200	226,900	
Corn for Fodder.....	—	—	—	100	1,000 ¹	6,400	10	100 ¹	650	
Field Roots.....	70	37,800	38,900	30	15,800	16,400	40	21,000	20,600	
Hay.....	40,400	66,700 ¹	1,387,400	37,000	41,100 ¹	861,000	68,000	129,200 ¹	2,764,900	
Other ²	60	1,060	1,830	60	2,110	2,860	50	930	1,490	
All Field Crops ³	52,960	2,364,030	54,650			1,678,860	97,300		4,018,940	
B—Nickel Range										
Manitoulin										
Winter Wheat.....	200	6,400	11,300	100	3,100	5,500	450	14,400	25,200	
Spring Wheat.....	100	2,500	4,500	280	7,200	12,900	170	4,300	7,400	
Oats.....	9,000	387,900	302,600	12,100	461,000	336,500	11,200	537,600	435,500	
Barley.....	350	13,900	16,500	400	13,000	14,400	400	16,000	18,200	
Mixed Grains.....	3,000	132,300	115,100	1,400	49,000	43,100	1,050	50,600	44,000	
Potatoes.....	200	38,000	86,300	1,150	308,200	668,800	200	55,800	104,300	
Corn for Fodder.....	320	3,800 ¹	24,900	140	1,400 ¹	9,300	90	800 ¹	5,200	
Field Roots.....	10	5,300	5,300	40	21,100	22,200	40	21,000	21,300	
Hay.....	37,000	66,600 ¹	1,539,100	27,300	23,500 ¹	510,000	28,900	35,000 ¹	815,900	
Other ²	110	4,840	6,690	—	160	3,970	50	1,700	2,530	
All Field Crops ³	50,290		2,112,290		43,070			42,580		1,479,530
Sudbury										
Algoma										
Winter Wheat.....	—	—	—	100	3,100	5,500	450	14,400	25,200	
Spring Wheat.....	—	—	—	280	7,200	12,900	170	4,300	7,400	
Oats.....	—	—	—	12,100	461,000	336,500	11,200	537,600	435,500	
Barley.....	—	—	—	400	13,000	14,400	400	16,000	18,200	
Mixed Grains.....	—	—	—	1,400	49,000	43,100	1,050	50,600	44,000	
Potatoes.....	—	—	—	1,150	308,200	668,800	200	55,800	104,300	
Corn for Fodder.....	—	—	—	140	1,400 ¹	9,300	90	800 ¹	5,200	
Field Roots.....	—	—	—	40	21,100	22,200	40	21,000	21,300	
Hay.....	—	—	—	27,300	23,500 ¹	510,000	28,900	35,000 ¹	815,900	
Other ²	—	—	—	—	3,970	5,440	50	1,700	2,530	
All Field Crops ³	—	—	—	—	43,070	1,628,140		42,580		1,479,530

¹Tons.²Includes Rye, Buckwheat, Dry Peas, Corn for Husking and Flax.³Does not include Seeded Pasture.

**FARM CAPITAL, ALL CENSUS FARMS,
DISTRICTS, NORTHEASTERN ONTARIO REGION, 1951 AND 1961**

		Value of Land and Buildings	Value of Machinery and Equipment	Value of Livestock and Poultry	Total Capital Value
		\$	\$	\$	\$
A—Clay Belt					
Cochrane.....	1951	8,122,593	3,145,867	3,114,908	14,383,368
	1961	8,164,600	3,696,200	2,162,000	14,022,800
	% Change 1961/1951	0.5	17.5	-30.6	-2.5
Nipissing.....	1951	6,691,757	2,546,260	3,526,893	12,764,910
	1961	8,056,900	3,191,500	2,744,300	13,992,700
	% Change 1961/1951	20.4	25.3	-22.2	9.6
Timiskaming.....	1951	7,921,884	3,467,979	4,809,302	16,199,165
	1961	9,704,800	4,207,000	3,572,000	17,483,800
	% Change 1961/1951	22.5	21.3	-25.7	7.9
Sub-total.....	1951	22,736,234	9,160,106	11,451,103	43,347,443
	1961	25,926,300	11,094,700	8,478,300	45,499,300
	% Change 1961/1951	14.0	21.1	-26.0	5.0
B—Nickel Range					
Manitoulin.....	1951	5,204,130	2,222,376	4,861,950	12,288,456
	1961	6,961,600	2,745,900	3,941,000	13,648,500
	% Change 1961/1951	33.8	23.6	-18.9	11.1
Sudbury.....	1951	7,152,607	2,883,067	3,641,045	13,676,719
	1961	9,309,000	3,039,400	2,109,400	14,457,800
	% Change 1961/1951	30.1	5.4	-42.1	5.7
Sub-total.....	1951	12,356,737	5,105,443	8,502,995	25,965,175
	1961	16,270,600	5,785,300	6,050,400	28,106,300
	% Change 1961/1951	31.7	13.3	-28.8	8.2
C—Sault					
Algoma.....	1951	6,482,077	2,672,731	3,469,342	12,624,150
	1961	8,857,700	3,127,400	2,571,600	14,556,700
	% Change 1961/1951	36.6	17.0	-25.9	15.3
Total, Northeastern Ontario Region..	1951	41,575,048	16,938,280	23,423,440	81,936,768
	1961	51,054,600	20,007,400	17,100,300	88,162,300
	% Change 1961/1951	22.8	18.1	-27.0	7.6

FARM MACHINERY AND ELECTRIC POWER, DISTRICTS, NORTHEASTERN ONTARIO REGION, 1961

FARMS REPORTING

	Farms Reporting										Total, Northeastern Ontario Region
	A—Clay Belt					B—Nickel Range			C—Stault		
	Cochrane No.	Nipissing No.	%	Timiskaming No.	%	Mauritoulin No.	%	Sudbury No.	%	Algoma No.	%
Total Number of Census Farms ..	900	100.0		811	100.0	1,070	100.0	728	100.0	841	100.0
Automobiles.....	407	45.2		495	61.0	619	57.9	542	74.5	374	44.5
Motor Trucks.....	415	46.1		347	42.8	669	62.5	278	38.2	456	54.2
Tractors.....	683	75.9		648	79.9	888	83.0	592	81.3	663	78.8
Grain Combines.....	33	3.7		49	6.0	118	11.0	16	2.2	47	5.6
Grain Binders.....	280	31.1		436	53.8	538	50.3	394	54.1	301	35.8
Threshing Machines.....	98	10.9		129	15.9	229	21.4	103	14.1	79	9.4
Pick-up Hay Balers.....	219	24.3		230	28.4	343	32.1	200	27.5	171	20.3
Forage Crop Harvesters.....	24	2.7		22	2.7	27	2.5	15	2.1	27	3.2
Electric Motors ¹	262	29.1		266	32.8	328	30.7	239	32.8	181	21.5
Milking Machines.....	168	18.7		202	24.9	293	27.4	117	16.1	142	16.9
Electric Milk Coolers.....	112	12.4		213	26.3	108	10.1	35	4.8	173	20.6
Electric Power.....	852	94.7		776	95.7	1,005	93.9	666	91.5	798	94.9
Value of Machinery and Equipment.....(\$)	3,696,200			3,191,500		4,207,000		2,745,900		3,039,400	

20,007,400

3,127,400

¹ One third h.p. and over.

WILD FUR CATCH, NORTHEASTERN ONTARIO REGION, 1963-64 SEASON

Administrative District	Number of Trappers	Beaver	Fisher	Lynx	Marten	Mink	Otter	Coloured Fox	Muskrat	Raccoon	Skunk	Squirrel	Weasel
Chapleau	79	1,256	98	37	978	369	136	.54	1,442	—	—	1	.95
Cochrane	148	3,150	170	171	1,730	706	165	.27	1,364	—	—	4	.210
Gogama	91	1,183	94	54	1,003	432	125	.43	2,466	—	—	55	.123
Kapuskasing	185	9,478	110	118	3,078	1,182	489	.69	6,228	—	2	14	.330
North Bay	126	6,828	259	71	74	2,174	284	.91	5,595	—	—	104	.239
Swastika	206	3,408	233	250	148	1,042	123	.52	1,149	—	—	31	.245
Sault Ste. Marie	281	3,600	89	53	468	958	282	119	2,367	11	1	56	.197
Sudbury	176	8,357	155	67	20	2,262	350	118	5,965	19	—	24	.300
White River *	90	4,272	35	49	880	542	207	24	1,910	—	—	6	.85
Geraldton *	243	8,959	49	—	—	—	—	—	—	—	—	—	—
Pembroke *	166	5,554	329	1	339	1,333	244	34	7,752	95	—	23	.67
Patricia East *	309	10,943	36	302	751	1,107	1,078	40	6,685	—	3	151	.428
Average Price * (\$)	13.03	12.61	14.65	5.63	10.73	29.73	5.14	1.50	2.01	.50	.33	.44	

* Only portions of these Districts are included in the Northeastern Ontario Economic Region.

** Seasonal average price received at the Ontario Trappers Association sales.

FUR FARMING AND FISHING

COMMERCIAL FISHERIES, CATCH AND VALUE BY FISHING AREAS,
NORTHEASTERN ONTARIO REGION, 1964

	lbs.	\$
North Channel		
Northern pike	25,197	2,649
Yellow perch	28,992	4,148
Lake trout.....	225	82
Sturgeon.....	9,084	12,150
Whitefish.....	92,763	36,074
Yellow pickerel	15,428	5,843
Other species..	42,244	3,544
Total.	213,933	64,489
Lake Superior		
Chub....	28,856	4,075
Lake trout	43,155	21,829
Sturgeon ..	712	817
Whitefish	72,383	30,935
Yellow pickerel	1,039	408
Total.....	144,145	58,065
Lake Huron		
Chub	331,377	48,025
Lake trout...	1,434	611
Yellow perch.	151	23
Sturgeon.....	94	88
Whitefish...	111,522	49,330
Yellow pickerel	2,216	965
Total...	446,794	99,042
Georgian Bay		
Perch ..	23,814	4,526
Whitefish.....	24,750	9,829
Yellow pickerel.	9,100	3,129
Total.....	57,664	17,485
Inland Waters¹		
Herring.....	5,873	715
Northern pike.	11,543	1,327
Perch.....	601	89
Sturgeon	20,968	23,542
Whitefish ..	24,853	8,491
Yellow pickerel	24,632	6,565
Other species..	42,794	4,926
Total ..	131,264	45,654
Total, Northeastern Ontario Region	993,800	284,734

¹Lake Abitibi, Abitibi River, Albany River, Groundhog River, Mattagami River, Mattagami Lake, Nagagami Lake, Lake Nipissing, Lake Timiskaming, Lake Wanapetei, Penage Lake, Mindemoya Lake.

Note: Due to rounding, individual value figures may not add to totals.

HYDRO-ELECTRIC GENERATING STATIONS IN THE NORTHEASTERN ONTARIO REGION, AT DECEMBER 31, 1965

River	Development	Owner	Year Installed			No. of Units	Turbines		Generators	
			First Unit	Latest Unit	Unit Capacity hp.		Total Capacity hp.	Unit Capacity hp.	Total Capacity hp.	k.w.
Abitibi	Abitibi Canyon	HEPCO	1933	1959	4	66,000	330,000	43,200	41,225	
	Iroquois Falls	APC	1949	1949	1	66,000	330,000	1,200	1,200	208,100
Island Falls					1	1,800		1,280		
	Otter Rapids	HEPCO	1924	1925	5	2,500	31,500	2,025	21,485	
	Twin Falls	APC	1961	1963	4	12,000	48,000	9,600	38,400	
		APC	1921	1925	4	60,000	240,000	43,700	174,800	
Kepusasing		SFPPC	1923		5	6,000	30,000	4,050	20,250	
	Matabitchuan	HEPCO	1910	1924	1	2,500	2,500	2,750	2,750	
Matagami	Harmon	HEPCO	1965	1965	4	3,300	13,200	1,690	6,760	
	Kipling ²	HEPCO	1963	1963	2	94,000	188,000	64,600	129,200	
Little Long		HEPCO	1923	1923	2	84,000	168,000	60,800	121,600	
	Lower Sturgeon	HEPCO	1911	1916	2	4,000	8,000	3,200	6,400	
	Sandy Falls				2	1,200		950		
Smoky Falls		SFPPC	1928	1931	1	2,500	4,900	1,595	3,495	
	Smooth Rock Falls	APC	1916	1916	4	18,750	75,000	13,200	52,800	
	Wawaatin Falls	HEPCO	1912	1918	2	4,500	9,000	2,800	5,600	
Michipicoten					2	3,450		2,500		
	High Falls	GLPC	1930	1950	2	4,000	14,900	3,375	11,750	
Hollingsworth Falls					2	11,000		6,750		
	McPhail Falls	GLPC	1959		1	13,200	35,200	9,675	23,175	
	Scott Falls	GLPC	1954	1954	1	30,300	30,300	20,000	20,000	
		GLPC	1952	1952	2	7,500	15,000	5,000	10,000	
					2	10,000	20,000	6,800	13,600	

HYDRO-ELECTRIC GENERATING STATIONS¹ IN THE NORTHEASTERN ONTARIO REGION, AT DECEMBER 31, 1965 (Cont'd)

River	Development	Owner	Year Installed			Turbines			Generators		
			First Unit	Latest Unit	No. of Units	Unit Capacity		Total Capacity hp.	Unit Capacity kw.	Total Capacity kw.	
						hp.	hp.				
Mississagi.....	Geo. W. Rayner Red Rock Falls	HEPCO HEPCO	1950 1960	1950 1961	2 2	29,000 26,500	58,000 53,000	21,150 20,250	42,300 40,500		
Montreal (Algoma)....	Gartshore Falls Hogg Lower Falls Upper Falls	GLPC GLPC GLPC GLPC	1958 1964 1938 1937	1914 1910 1923 1930	1 1 2 2	30,300 21,750 10,900 12,600	30,300 21,750 21,800 9,000	20,000 15,000 8,100 9,000	20,000 15,000 16,200 9,000		
Montreal (Timiskaming).....	Fountain Falls Hound Chute Indian Chute Upper Hatch Otto Holden	HEPCO HEPCO HEPCO HEPCO HEPCO	1914 1911 1924 1930 1952	1914 1911 1924 1930 1953	2 4 2 2 4	1,500 1,335 2,250 6,500 35,000	3,000 5,340 4,500 13,000 33,000	1,000 700 1,620 4,800 27,000	2,000 2,800 3,240 9,600 25,650		
Ottawa	Sault Ste. Marie St. Mary....	GLPC	1918	1931	24	900	650	1,440	21,520		
					3	2,400	31,000	1,600			
					1	2,200					
Spanish	Big Eddy Espanola	HCL KVPC	1929 1906	1929 1946	3 4	9,400 1,675	28,200 10,000	7,200 19,050	21,600 14,250		
					1	2,350	19,050	1,750			
					4	3,550		2,000			
					1	7,500	21,700	5,550			
					2	2,000		1,500			
					1	2,600	6,600	1,875			

Surgeon	Crystal Falls Surgeon Falls	HEPCO APC	1921 1902	1921 1964	4 1	2,600 2,500	10,400 1,800	2,020 8,080
					1	1,000	1,685	
					1	1,500	1,350	
					1	1,500	1,685	
					1	1,500	1,415	
					1	1,000	9,000	9,350
Vermilion.....	Wabagishik	HCL	1912	1935	1	2,700		
					1	2,700	5,400	2,140
Wanapitei.....	Coniston	HEPCO	1905	1915	1	1,200		720
					1	1,600		1,125
					1	3,500	6,300	2,250
					2	1,800	3,600	1,125
					2	3,500	7,000	2,250
							2,000	4,000

¹With total installed turbine capacities not less than 2,000 hp.

²Two units with a total generator capacity of 125,400 kw. will be installed in 1966. Provision for two additional units.

Owner Code Index

APC	Abitibi Paper Company Limited
GLPC	Great Lakes Power Corporation Limited
HCL	Huronian Company Limited
HEPCO	Hydro-Electric Power Commission of Ontario
KVPC	Kalamazoo Vegetable Parchment Company Limited
SFPPC	Spruce Falls Power and Paper Company

ELECTRICITY IN NORTHEASTERN ONTARIO REGION, ELECTRIC ENERGY SALES AND REVENUE
 *ULTIMATE CUSTOMERS SERVED DIRECTLY OR INDIRECTLY BY THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO,
 1955, 1964, 1965

	Calendar Year Sales and Revenue			Per Cent Change		
	1955 (000,000's Kwh.)	1964 (000,000's Kwh.)	1965 (000,000's Kwh.)	Sales (Kwh.)	1965/1955	1965/1964
A—Clay Belt¹						
Domestic (Incl. Residential Type and Summer Cottage)	1,26.0	2,094	294.2	4,575	323.3	4,904
Farm	11.4	306	28.5	53.1	30.0	54.7
Commercial	61.6	1,156	135.7	2,220	152.0	2,433
Power (Incl. Direct Industrial)	594.8	3,461	727.8	5,537	767.4	5,742
Street lighting	4.0	118	7.0	201	7.4	21.3
Secondary (Power)	105.9	160	23.5	38	50.2	81
Other	—	—	—	6	—	—
Total	903.7	7,295	1,216.7	13,108	1,330.3	13,920
					47.2	9.3
B—Nickel Range						
Domestic (Incl. Residential Type and Summer Cottage)	105.1	1,745	260.2	3,555	281.7	3,737
Farm	4.3	116	5.8	120	6.1	122
Commercial	33.3	60.5	85.8	1,482	102.1	1,502
Power (Incl. Direct Industrial)	959.1	5,341	1,442.5	8,434	1,528.4	8,892
Street Lighting	2.4	86	6.9	239	7.0	246
Secondary (Power)	—	—	—	—	—	—
Other	—	—	—	5	—	—
Total	1,104.2	7,893	1,801.2	13,835	1,925.3	14,499
					74.4	6.9
					83.7	4.8

C—South²								
Domestic (Incl. Residential Type and Summer Cottage).....	2.8	76	35.9	647	34.8	61.0	1,142.9	-3.1
Farm.....	0.6	21	2.3	45	2.4	47	300.0	4.3
Commercial.....	3.2	75	13.7	253	13.6	25.4	325.0	-0.7
Power (Incl. Direct Industrial).....	3.9	50	280.5	2,083	187.2	1,568	4,700.0	-33.3
Street Lighting.....	0.1	4	1.5	33	1.5	34	1,400.0	—
Secondary (Power).....	—	—	—	—	—	—	—	—
Other.....	—	—	—	2	—	—	—	-100.0
Total	10.6	226	333.9	3,063	239.5	2,513	2,159.4	-28.3
Total, Northeastern Ontario Region							1,011.9	-18.0
Domestic (Incl. Residential Type and Summer Cottage).....	233.9	3,915	590.3	8,777	639.8	9,251	173.5	8.4
Farm.....	16.3	443	36.6	696	38.5	716	136.2	5.2
Commercial.....	98.1	1,836	235.2	3,955	267.7	4,189	172.9	13.8
Power (Incl. Direct Industrial).....	1,557.8	8,852	2,450.8	16,054	2,483.0	16,202	59.4	1.3
Street Lighting.....	6.5	208	15.4	473	15.9	493	144.6	3.2
Secondary (Power).....	105.9	160	23.5	38	50.2	81	-52.6	113.6
Other.....	—	—	—	13	—	—	—	—
Total	2,018.5	15,414	3,351.8	30,066	3,495.1	30,932	73.2	4.3

*Total for customers of Municipal Electrical Utilities; Ontario Hydro's Local Systems, Rural Operating Areas and Direct Industrial Customers.

¹Does not include power generated by Abitibi Paper Company or Spruce Falls Power and Paper Company.

²Does not include power generated by Great Lakes Power Company.

THERMAL-ELECTRIC GENERATING STATIONS¹ IN THE NORTHEASTERN ONTARIO REGION, AT DECEMBER 31, 1965

Location	Owner	Year Installed		Fuel	Generators		Total Capacity k.w.
		First Unit	Latest Unit		No.	Unit Capacity k.w.	
Blind River	MFLC	1927	1927	Wood-waste	1	750	
Copper Cliff	INCO	1963	1963	Waste steam	1	2,000	2,750
Espanola ...	KVPC	1947	1951	Coal	2	8,900	17,800
Kapuskasing	SFPPC	1928	1958	Coal, Gas,	2	2,000 650	2,000
				Wood-waste	1	12,500	
				Coal,	1	9,100	22,900
				Gas,	1	3,500	
				Wood-waste	2	500	
Sault Ste. Marie	APC	1927		Gas, Oil, Coal	2	12,500	26,000
Sault Ste. Marie	ASC	1912	1963		2	500	

¹With total installed generator capacities not less than 1,500 kw

Owner Code Index

- APC Abitibi Paper Company Limited
 ASC Algoma Steel Corporation Limited
 INCO International Nickel Company of Canada Limited
 KVPC Kalamazoo Vegetable Parchment Company Limited
 MFLC McRae Lumber Co. (Domtar)
 SFPPC Spruce Falls Power and Paper Company

PRINCIPAL STATISTICS OF MANUFACTURING, DISTRICTS, NORTHEASTERN ONTARIO REGION, 1961 AND 1962

<u>Manufacturing Activity</u>											MANUFACTURING			
												Total Activity		
		Production and Related Workers		Cost of Materials and Supplies Used		Value Added—Manufacturing Activity		Shipments of Goods of own Manufacture		Working Owners and Partners Withdrawals		Total Employees Salaries and Wages (\$'000's)		
Establishments	No.	Man-Hours	(\$'000's)	Fuel and Electricity	(\$'000's)	Materials and Supplies Used	(\$'000's)	(\$'000's)	(\$'000's)	Number	(\$'000's)	Number	(\$'000's)	(\$'000's)
A—Clay Belt	Cochrane	1961	74	3,020	6,440	14,570	4,082	39,870	49,179	93,040	39	153	3,940	19,488
		1962	81	3,064	6,740	15,446	4,088	41,031	53,561	98,722	51	196	3,933	20,278
	% Change 1962/1961	9.5	1.5	4.7	6.0	0.1	2.9	8.9	6.1	30.8	28.1	-0.2	4.1	
	Nipissing	1961	80	2,061	4,594	7,556	1,413	16,942	20,243	37,814	26	79	2,767	10,882
		1962	77	2,053	4,515	7,947	1,514	18,266	22,939	42,549	23	77	2,672	11,092
	% Change 1962/1961	-3.8	-0.4	-1.7	5.2	7.1	7.8	13.3	12.5	-11.5	-2.5	-3.4	1.9	
	Timiskaming	1961	74	845	1,798	2,665	331	6,748	6,262	12,894	38	116	1,152	3,929
Sub-total		1962	69	752	1,677	2,537	394	7,783	5,968	14,401	30	101	1,066	3,941
	% Change 1962/1961	-6.8	-11.0	-6.7	-4.8	19.0	15.3	-4.7	11.7	-21.1	-12.9	-7.5	0.3	
		1961	228	5,926	12,832	24,791	5,826	63,560	75,684	143,748	103	348	7,859	34,299
		1962	227	5,869	12,932	25,930	5,996	67,080	82,468	155,672	104	374	7,671	35,311
	% Change 1962/1961	-0.4	-1.0	0.8	4.6	2.9	5.5	2.9	9.0	8.3	1.0	7.5	-2.4	3.0
	B—Nickel Range													
	Manitoulin	1961	17	47	82	95	36	785	273	1,089	8	21	65	140
Sub-total		1962	15	33	74	89	36	748	293	1,079	8	18	50	130
	% Change 1962/1961	-11.8	-29.8	-9.8	-6.3	—	-4.7	—	7.3	-0.9	—	-14.3	-23.1	-7.1
	Sudbury	1961	125	9,176	18,353	43,416	18,806	149,979	268,651	437,857	68	247	11,521	56,807
		1962	124	8,568	16,840	40,379	16,757	129,393	258,014	404,307	58	215	10,763	53,778
	% Change 1962/1961	-0.8	-6.6	-8.2	-7.0	-10.9	-13.7	-4.0	-4.0	-7.7	-14.7	-13.0	-6.6	-5.3
		1961	142	9,223	18,435	43,511	18,842	150,764	268,924	438,946	76	268	11,586	56,947
	% Change 1962/1961	-1.1	-6.7	-8.3	-7.0	-10.9	-13.7	-4.0	-4.0	-7.7	-13.2	-13.1	-6.7	-5.3

PRINCIPAL STATISTICS OF MANUFACTURING, DISTRICTS, NORTHEASTERN ONTARIO REGION, 1961 AND 1962 (Cont'd)

	Manufacturing Activity						Total Activity				
	Production and Related Workers		Cost of Materials and Supplies Used		Value Added—Manufacturing Activity		Value of Shipments of Goods of own Manufacture		Total Employees		
	Establishments	Number	Man-hours Paid	Wages (\$000's)	Fuel and Electricity (\$000's)	(\$000's)	(\$000's)	(\$000's)	Working Owners and Partners	With-drawals Number (\$000's)	Salaries and Wages (\$000's)
C—Sault											
Algoma.....	1961	74	7,919	16,713	41,624	6,079	100,078	108,940	214,235	40	152 10,010
	1962	81	8,224	17,759	44,630	6,926	108,087	117,411	232,080	43	155 10,394
% Change 1962/1961		9.5	3.9	6.3	7.2	13.9	8.0	7.8	8.3	7.5	2.0 3.8
Total, Northeastern Ontario Region.....	1961	444	23,068	47,980	109,926	30,747	314,402	453,548	796,929	219	768 29,455
	1962	447	22,694	47,606	111,030	29,714	305,307	458,185	793,138	213	762 28,878
% Change 1962/1961		0.7	-1.6	-0.8	1.0	-3.4	-2.9	1.0	-0.5	-2.7	-0.8 -2.0
Total, Ontario.....	1961	12,410	432,754	912,244	1,738,334	237,309	6,384,810	5,442,010	12,015,812	5,969	22,146 638,584
	1962	12,586	455,872	968,302	1,907,206	249,458	7,176,221	6,006,765	13,342,557	6,043	23,114 662,747
% Change 1962/1961		1.4	5.3	6.2	9.7	5.1	12.4	10.4	11.0	1.2 4.4	3.8

Note: Due to rounding, figures may not add to totals.

PRINCIPAL STATISTICS OF MANUFACTURING INDUSTRIES, NORTHEASTERN ONTARIO REGION, 1962

Industry Group and Industry	Manufacturing Activity										Total Activity			
	Production and Related Workers		Cost of Materials and Supplies Used		Value Added—Manufacturing Activity		Shipments of Goods of own Manufacture		Total Employees ²		Salaries and Wages ²	Total Value of Shipments and Other Revenue ¹		
	Establishments	Employees	Cost of Fuel and Electricity ¹	(\$000's)	(\$000's)	(\$000's)	(\$000's)	(\$000's)	1962	1961	% Change 1962/61	No.	(\$000's)	(\$000's)
Food and Beverage Industries														
Dairy Factories.....	47	227	779	354	8,558	4,523	13,413	12,593	6,5	673	2,626	14,640		
Feed Manufacturers.....	8	16	60	20	681	206	884	706	25.2	39	139	1,570		
Bakeries.....	49	302	910	279	3,738	3,949	7,985	7,494	6.6	574	2,046	9,182		
Soft Drink Manufacturers.....	26	172	503	160	1,747	2,727	4,635	4,514	2.7	355	1,250	5,803		
Breweries.....	3	69	301	49	567	1,649	2,274	2,400	-5.3	127	564	2,430		
All Other Food and Beverage Industries.....	4	30	81	43	1,041	351	1,429	2,071	-31.0	66	155	1,607		
Total.....	137	816	2,634	905	16,332	13,405	30,620	29,778	2.8	1,834	6,780	35,232		
Textile Industries														
All Textile Industries.....	4	17	54	4	138	152	291	255	14.1	20	66	391		
Total.....	4	17	54	4	138	152	291	255	14.1	20	66	391		
Wood Industries														
Sawmills.....	106	2,156	7,240	814	16,847	14,648	34,172	28,522	19.8	2,527	8,831	36,472		
Sash, Door and Planing Mills.....	15	138	448	79	2,131	913	3,119	4,613	-32.4	184	689	5,070		
Veneer and Plywood Mills.....	7	726	2,443	130	3,360	5,076	8,479	7,025	{11,228 ⁴	-6.5	790	2,832	8,479	
All Other Wood Industries.....	5	107	414	70	1,172	788	2,025	7.7	118	458	2,035			
Total.....	133	3,127	10,545	1,093	23,510	21,425	47,795	44,363	7.7	3,619	12,810	52,056		
Furniture and Fixture Industries														
Household Furniture Industry.....	17	22	61	6	106	197	308	270	14.1	23	66	308		
Other Furniture Industries.....	5	22	77	9	98	108	299	122	145.1	35	111	314		
Total.....	22	44	138	15	204	305	607	392	54.8	58	177	623		

PRINCIPAL STATISTICS OF MANUFACTURING INDUSTRIES, NORTHEASTERN ONTARIO REGION, 1962 (Cont'd)

Industry Group and Industry	Manufacturing Activity						Total Activity		
	Establishments	No.	Production and Related Workers Employees	Cost of Materials and Supplies Used	Value Added—Manufacturing Activity ¹	Value of Shipments of Goods of own Manufacture (\$000's)	1962		Salaries and Wages ² (\$000's)
							(\$000's)	% 6	
Paper and Allied Industries									
Pulp and Paper Mills.....	8	4,233	22,504	7,355	53,914	70,964	131,074	123,880	5.8
Total.....	8	4,233	22,504	7,355	53,014	70,964	131,074	123,880	5.8
Printing and Publishing and Allied Industries									
Commercial Printing	27	85	307	12	348	780	1,139	1,093	4.2
All Other Printing and Publishing	13	245	1,088	84	890	4,689	5,662	5,512	2.7
Total.....	40	330	1,395	96	1,238	5,469	6,801	6,605	3.0
Primary Metal Industries									
All Primary Metal Industries.....	12	12,881	68,036	18,819	197,049	326,061	540,766	560,766	-3.6
Total.....	12	12,881	68,036	18,819	197,049	326,061	540,766	560,766	-3.6
Metal Fabricating Industries									
Fabricated Structural Metal Industry	3	200	1,120	42	1,754	1,651	3,446	4,336	-20.5
Machine Shops.....	13	124	575	47	497	1,041	1,586	1,157	37.1
Ornamental and Architectural Metal	5	40	203	13	418	522	938	1,937 ⁶	35.8
All Other Metal Fabricating Industries	4	77	315	28	792	865	1,692		
Total.....	25	441	2,213	130	3,461	4,079	7,662	7,430	3.1
Machinery Industries									
Miscellaneous Machinery and Equipment Manufacturers.....	9	190	781	57	2,045	2,261	4,297	3,417	25.8
Total	9	190	781	57	2,045	2,261	4,297	3,417	25.8

Machinery Industries
Miscellaneous Machinery and
Equipment Manufacturers.....

Total 9 190 781 57 2,045 2,261 4,297 3,417 25.8 281 1,301 5,064

Transportation Equipment Industries								
All Transportation Equipment Manufacturers	6	28	109	7	420	373	767	605
Total	6	28	109	7	420	373	767	605
Non-Metallic Mineral Products Industries								
Concrete Products Manufacturers	15	111	367	81	968	1,205	2,010	1,734
Ready-Mix Concrete Manufacturers	6	60	273	108	1,892	1,049	3,048	2,766
All Other Non-Metallic Mineral Products	5	24	67	14	54	125	184	247
Total	26	195	707	203	2,914	2,379	5,242	4,747
Chemical and Chemical Products Industries								
All Chemical Products Manufacturers	7	331	1,727	1,020	4,786	10,770	16,475	13,721
Total	7	331	1,727	1,020	4,786	10,770	16,475	13,721
Miscellaneous Manufacturing Industries								
Signs and Displays Industry	7	39	117	9	111	322	437	430
All Other Miscellaneous Manufacturing Industries	8	19	60	2	43	181	226	289
Total	15	58	177	11	154	503	663	719
All Other Major Groups	3	3	10	70	42	39	78	237
Total, Northeastern Ontario	447	22,694	111,030	29,714	305,307	458,185	793,138	796,915

Note: These data are based on the revised Standard Industrial Classification and new establishment concept. Statistics have been extended to cover non-manufacturing activities of manufacturing establishments and are now sub-divided into manufacturing activity and total activity.

¹Cannot be reported separately for manufacturing and non-manufacturing activities but related substantially to manufacturing activity.

²Includes production and related workers, administrative and office employees, sales, distribution and other employees.

³Shipments of goods of own manufacture, value of shipments of goods purchased for resale and other operational revenues.

⁴Veneer and plywood mills included in "all other wood industries" in 1961.

⁵Ornamental and architectural metal included in "all other metal fabricating industries" in 1961.

CONSTRUCTION AND HOUSING

OCCUPIED DWELLINGS BY TYPE,
DISTRICTS, NORTHEASTERN ONTARIO REGION, 1961

		Total	Single Detached	Single Attached	Apartment or Flat	Mobile
A — Clay Belt						
Cochrane.....	No.	22,049	15,011	1,951	4,931	156
	%	(100.0)	(68.1)	(8.8)	(22.4)	(0.7)
Nipissing.....	No.	16,170	12,263	1,281	2,463	163
	%	(100.0)	(75.8)	(7.9)	(15.2)	(1.0)
Timiskaming.....	No.	12,839	8,848	613	3,358	--
	%	(100.0)	(68.9)	(4.8)	(26.2)	
Sub-total.....	No.	51,058	36,122	3,845	10,752	n.a.
	%	(100.0)	(70.7)	(7.5)	(21.1)	
B — Nickel Range						
Manitoulin.....	No.	2,840	2,611	--	149	--
	%	(100.0)	(91.9)		(5.2)	
Sudbury.....	No.	38,395	25,102	3,876	9,248	169
	%	(100.0)	(65.4)	(10.1)	(24.1)	(0.4)
Sub-total.....	No.	41,235	27,713	n.a.	9,397	n.a.
	%	(100.0)	(67.2)		(22.8)	
C — Sault						
Algoma.....	No.	26,726	19,792	1,209	4,413	1,312
	%	(100.0)	(74.1)	(4.5)	(16.5)	(4.9)
Total, Northeastern Ontario Region.....	No.	119,019	83,627	n.a.	24,562	n.a.
	%	(100.0)	(70.3)		(20.6)	

--Estimate of less than 100.

Note: Due to rounding, percentages may not add to 100.0.

n.a. Not available.

**OCCUPIED DWELLINGS BY TENURE,
DISTRICTS, NORTHEASTERN ONTARIO REGION, 1951 AND 1961**

		Total		Owned		Rented	
		No.	%	No.	%	No.	%
A—Clay Belt							
Cochrane.	1951	19,415	100.0	10,975	56.5	8,440	43.5
	1961	22,049	100.0	13,858	62.9	8,191	37.1
Nipissing.	1951	11,485	100.0	8,375	72.9	3,110	27.1
	1961	16,170	100.0	11,465	70.9	4,705	29.1
Timiskaming..	1951	12,730	100.0	7,660	60.2	5,070	39.8
	1961	12,839	100.0	8,193	63.8	4,646	36.2
Sub-total.	1951	43,630	100.0	27,010	61.9	16,620	38.1
	1961	51,058	100.0	33,516	65.6	17,542	34.4
B—Nickel Range							
Manitoulin....	1951	2,805	100.0	2,430	86.6	375	13.4
	1961	2,840	100.0	2,444	86.1	396	13.9
Sudbury.	1951	24,340	100.0	14,050	57.7	10,290	42.3
	1961	38,395	100.0	22,757	59.3	15,638	40.7
Sub-total..	1951	27,145	100.0	16,480	60.7	10,665	39.3
	1961	41,235	100.0	25,201	61.1	16,034	38.9
C—Sault							
Algoma..	1951	15,335	100.0	11,345	74.0	3,990	26.0
	1961	26,726	100.0	19,453	72.8	7,273	27.2
Total, Northeastern Ontario							
Region...	1951	86,110	100.0	54,835	63.7	31,275	36.3
	1961	119,019	100.0	78,170	65.7	40,849	34.3
% Change 1961/1951..		38.2		42.6		30.6	
Total, Province of Ontario..	1951	1,181,125	100.0	821,335	69.5	359,790	30.5
	1961	1,640,750	100.0	1,157,229	70.5	483,521	29.5
% Change 1961/1951...		38.9		40.9		34.4	

CONSTRUCTION AND HOUSING

OCCUPIED DWELLINGS BY CONDITION OF DWELLING,
DISTRICTS, NORTHEASTERN ONTARIO REGION, 1961

		Total	In Good Condition	In Need of Minor Repair	In Need of Major Repair
A—Clay Belt					
Cochrane.....	No.	22,049	13,259	6,420	2,370
	%	(100.0)	(60.1)	(29.1)	(10.7)
Nipissing.....	No.	16,170	11,001	3,608	1,561
	%	(100.0)	(68.0)	(22.3)	(9.7)
Timiskaming.....	No.	12,839	7,324	4,194	1,321
	%	(100.0)	(57.0)	(32.7)	(10.3)
Sub-total.....	No.	51,058	31,584	14,222	5,252
	%	(100.0)	(61.9)	(27.9)	(10.3)
B—Nickel Range					
Manitoulin.....	No.	2,840	1,668	839	333
	%	(100.0)	(58.7)	(29.5)	(11.7)
Sudbury.....	No.	38,395	27,498	8,302	2,595
	%	(100.0)	(71.6)	(21.6)	(6.8)
Sub-total.....	No.	41,235	29,166	9,141	2,928
	%	(100.0)	(70.7)	(22.2)	(7.1)
C—Sault					
Algoma.....	No.	26,726	18,622	6,096	2,008
	%	(100.0)	(69.7)	(22.8)	(7.5)
Total, Northeastern Ontario					
Region.....	No.	119,019	79,372	29,459	10,188
	%	(100.0)	(66.7)	(24.8)	(8.6)
Total, Ontario.....	No.	1,640,750	1,252,216	314,407	74,127
	%	(100.0)	(76.3)	(19.2)	(4.5)

Note: Due to rounding, percentages may not add to 100.0.

OCCUPIED DWELLINGS SHOWING WATER SUPPLY AND SEWAGE DISPOSAL,
DISTRICTS, NORTHEASTERN ONTARIO REGION, 1951 AND 1961

	Total Occupied Dwellings	Dwellings with Running Water			Method of Sewage Disposal ¹		
		Total		% of Occupied Dwellings	Hot and Cold	Connection to Sewer	Sepic Tank or Cesspool
		No.			Cold Only		Other
A—Clay Belt	1951	19,415	14,190	73.1	11,565	2,625	3,324
	1961	22,049	19,534	88.6	17,485	2,049	3,792
Nipissing	1951	11,485	7,645	66.6	5,205	2,440	1,813
	1961	16,170	14,398	89.0	12,470	1,928	2,840
Timiskaming	1951	12,730	9,360	73.5	7,170	2,190	1,998
	1961	12,839	10,925	85.1	9,423	1,502	2,750
Sub-total	1951	43,630	31,195	71.5	23,940	7,255	9,382
	1961	51,058	44,857	87.9	39,378	5,479	9,382
B—Nickel Range	1951	2,805	855	30.5	595	260	1,320
	1961	2,840	1,616	56.9	1,278	338	5
Sudbury	1951	24,340	18,635	76.6	12,955	5,680	1,515
	1961	38,395	35,762	93.1	31,193	4,569	6,266
Sub-total	1951	27,145	19,490	71.8	13,550	5,940	12,116
	1961	41,235	37,378	90.6	32,471	4,907	20,018
C Sault	1951	15,335	11,605	75.7	9,120	2,485	6,315
	1961	26,726	24,218	90.6	22,409	1,809	4,061
Total, Northeastern Ontario Region		86,110	62,290	72.3	46,610	15,680	29,286
	1961	119,019	106,453	89.4	94,258	12,195	21,224

¹Not available in 1951

OCCUPIED DWELLINGS SHOWING SANITATION FACILITIES,
DISTRICTS, NORTHEASTERN ONTARIO REGION, 1951 AND 1961

	Dwellings with Bath Facilities					
	Dwellings with Inside Flush Toilet			Total		
	Total Occupied Dwellings	No. % of Occupied Dwellings	Exclusive Use	No. % of Occupied Dwellings	Exclusive Use	Total No. % of Occupied Dwellings
A—Clay Belt						
Cochrane.....1951	19,415	13,370	68.9	12,975	395	11,460
1961	22,049	18,352	83.2	17,129	1,223	16,575
Nipissing.....1951	11,485	6,395	55.7	6,140	255	5,485
1961	16,170	13,375	82.7	12,557	818	12,342
Timiskaming.....1951	12,730	8,605	67.6	7,980	625	7,415
1961	12,839	10,094	78.6	9,316	778	9,420
Sub-total.....1951	43,630	28,370	65.0	27,095	1,275	24,360
1961	51,058	41,821	81.9	39,002	2,819	38,337
B—Nickel Range						
Manitoulin.....1951	2,805	n.a.	550	—	—	535
1961	2,840	1,325	46.7	1,251	—	1,268
Sudbury.....1951	24,340	14,935	61.4	13,460	1,475	12,755
1961	38,395	32,188	83.8	28,880	3,308	29,388
Sub-total.....1951	27,145	n.a.	14,010	n.a.	n.a.	12,150
1961	41,235	33,513	81.3	30,131	30,656	29,036
C—Sault						
Algoma.....1951	15,335	9,610	62.7	8,830	780	8,610
1961	26,726	22,976	86.0	21,099	1,877	21,885
Total, Northeastern Ontario Region.....1951	86,110	n.a.	49,935	n.a.	n.a.	43,260
1961	119,019	98,310	82.6	90,232	8,078	90,878
						76.4

—Estimate of less than 100.
n.a. Not available.

OCCUPIED DWELLINGS SHOWING SPECIFIED LIVING CONVENiences,
DISTRICTS, NORTHEASTERN ONTARIO REGION, 1951 AND 1961

	Total Occupied Dwellings No.	Refrigeration Facilities			Home Freezer ¹			Television Sets ¹			Passenger Automobiles No. % of Occupied Dwellings
		Total ²		% of Occupied Dwellings	Mechanical ³	Ice Box	No.	% of Occupied Dwellings	No.	% of Occupied Dwellings	
		No.	% of Occupied Dwellings	No.	No.	No.	No.	No.	No.	No.	
A—Clay Belt											
Cochrane	1951	19,415	11,240	57.9	10,090	1,150	2,755	12.5	17,806	80.8	6,205
	1961	22,049	20,116	91.2	19,988	105					14,128
Nipissing-	1951	11,485	7,100	61.8	5,130	1,970	2,396	14.8	14,340	88.7	3,995
	1961	16,170	15,346	94.9	15,028	315					11,438
Timiskaming	1951	12,730	7,690	60.4	6,785	905					4,510
	1961	12,839	11,843	92.2	11,703	130	1,313	10.2	9,707	75.6	8,449
Sub-total	1951	43,630	26,030	59.7	22,005	4,025					14,710
	1961	51,058	47,305	92.6	46,719	550	6,464	12.7	41,853	82.0	34,015
B—Nickel Range											
Manitoulin	1951	2,805	1,300	46.3	945	355					1,335
	1961	2,840	2,315 ⁴	81.5	2,260	—	791	27.9	1,773	62.4	1,802
Sudbury	1951	24,340	16,340	67.1	13,225	3,115					9,635
	1961	38,395	36,761	95.7	36,438	279	5,531	14.4	34,461	89.8	28,370
Sub-total	1951	27,145	17,640	65.0	14,170	3,470					10,970
	1961	41,235	39,076	94.8	38,698	n.o.	6,322	15.3	36,234	87.9	30,172
C—Sault											
Algoma	1951	15,335	9,560	62.3	7,470	2,090					6,395
	1961	26,726	25,129	94.0	24,913	175	4,529	16.9	22,308	83.5	20,335
Total, Northeastern Ontario Region	1951	86,110	53,230	61.8	43,645	9,585					32,075
	1961	119,019	111,510	93.7	110,330	n.o.	17,315	14.5	100,395	84.4	84,522
											71.0

¹Not available in 1951.²Includes other miscellaneous types of refrigeration.³Includes electric and gas refrigerators.⁴Estimated.— Estimate of less than 100.
n.a. Not available.

OCCUPIED DWELLINGS BY PRINCIPAL HEATING EQUIPMENT,
DISTRICTS, NORTHEASTERN ONTARIO REGION, 1951 AND 1961

		Furnace				Stove or Space Heater	Other		
		Total Occupied Dwellings		% of Occupied Dwellings					
		No.		Steam or Hot Water	Hot Air				
A—Clay Belt									
Cochrane.....	1951	19,415	8,105	41.7	2,595	5,510	10,845		
	1961	22,049	13,878	62.9	3,211	10,667	7,565		
Nipissing.....	1951	11,485	4,780	41.6	1,395	3,385	6,325		
	1961	16,170	10,943	67.7	2,577	8,366	5,062		
Timiskaming.....	1951	12,730	3,975	31.2	1,730	2,245	8,570		
	1961	12,839	6,843	53.3	1,861	4,982	5,839		
Sub-total.....	1951	43,630	16,860	38.6	5,720	11,140	25,740		
	1961	51,058	31,664	62.0	7,649	24,015	18,466		
B—Nickel Range									
Manitoulin.....	1951	2,805	455 ¹	16.2	45 ¹	410	2,340		
	1961	2,840	886	31.2	98	788	1,934		
Sudbury.....	1951	24,340	12,145	49.9	4,470	7,675	11,540		
	1961	38,395	28,803	75.0	7,619	21,184	9,198		
Sub-total	1951	27,145	12,600	46.4	4,515 ¹	8,085	13,880		
	1961	41,235	29,689	72.0	7,717	21,972	11,132		
C—Sault									
Algoma.....	1951	15,325	6,540	42.6	1,775	4,765	8,395		
	1961	26,726	17,803	66.6	4,078	13,725	8,644		
Total, Northeastern Ontario Region	1951	86,110	36,000 ¹	41.8	12,010 ¹	23,990	48,015		
	1961	119,019	79,156	66.5	19,444	59,712	38,242		

¹Estimated.

PRINCIPAL HEATING FUEL USED, DISTRICTS, NORTHEASTERN ONTARIO REGION, 1951 AND 1961

	Total Occupied Dwellings	Gas	Piped	Bottled	Other ²
	Cook	Coke	Liquid Fuel		
	Wood				
A—Clay Belt					
Cochrane	1951 19,415	8,595	—	8,395	2,225
	1961 22,049	1,949	—	4,108	8,642
Nipissing	1951 11,485	3,740	—	5,070	2,505
	1961 16,170	476	—	2,679	9,765
Timiskaming	1951 12,730	4,555	—	5,635	2,455
	1961 12,839	1,145	—	3,076	5,560
Sub-total	1951 43,630	16,890	n.a.	19,100	7,185
	1961 51,058	3,570	—	9,863	23,967
B—Nickel Range					
Manitoulin	1951 2,805	205	—	2,380	215
	1961 2,840	—	—	1,665	1,069
Sudbury	1951 24,340	13,215	110	5,730	5,220
	1961 38,395	3,318	—	2,833	29,357
Sub-total	1951 27,145	13,420	n.a.	8,110	5,435
	1961 41,235	n.a.	—	4,498	30,426
C—Sault					
Algoma	1951 15,335	4,065	4,060	4,085	2,725
	1961 26,726	1,776	—	2,334	21,839
Total, Northeastern Ontario Region	1951 86,110	34,375	n.a.	31,295	15,345
	1961 119,019	—	—	6,695	76,232

— Estimate of less than 100.

n.a. Not available.

Refers primarily to fuel oil but may include kerosene or some other type of liquid fuel.
Includes Electricity.

CONSTRUCTION AND HOUSING

DWELLING UNITS STARTED AND COMPLETED,
CENTRES OF 5,000 POPULATION AND OVER,
NORTHEASTERN ONTARIO REGION, 1961 TO 1965

	Started					Completed				
	1961	1962	1963	1964	1965	1961	1962	1963	1964	1965
A—Clay Belt										
Cochrane										
Kapuskasing.....	44	38	43	41	46	61	34	41	58	40
Timmins (town).....	112	55	65	74	86	105	83	65	60	79
(urban area) ¹	133	77	84	82	111	132	112	94	69	93
Nipissing										
North Bay.....	106	95	153	39	29	118	69	151	88	40
Sturgeon Falls.....	16	9	19	18	17	29	2	19	23	11
B—Nickel Range										
Sudbury										
Espanola.....	—	41	27	14	10	—	19	43	14	11
Sudbury (city).....	624	1,054	419	228	280	515	603	733	383	340
(urban area) ²	838	1,232	484	271	309	733	761	845	423	385
C—Sault										
Algoma										
Sault Ste. Marie ³	730	556	693	616	325	555	764	542	587	543

¹Includes Timmins town, Mountjoy twp., Tisdale twp. and Whitney twp.

²Includes Sudbury city, Chelmsford town, Coniston town, Copper Cliff town, Lively town, Blizzard twp., Neelon & Garson twp., Rorayside twp. and Waters twp.

³Includes Korah twp. and Tarenforus twp.

VALUE OF BUILDING PERMITS ISSUED,
NORTHEASTERN ONTARIO REGION, 1951 AND 1956 TO 1965

	Residential	Industrial	Commercial	Institutional and Government (Thousands of Dollars)	Other	Total
1951.....	9,076	398	2,243	4,359	16	16,092
1956.....	19,169	5,506	7,002	7,412	315	39,404
1957.....	19,131	3,726	5,851	4,957	25	33,690
1958.....	25,638	1,101	6,660	7,296	7	40,702
1959.....	29,689	2,103	7,482	11,651	2	50,927
1960.....	21,873	1,203	5,924	8,490	1	37,491
1961.....	29,893	1,199	9,498	12,094	1	52,685
1962.....	30,047	3,567	6,396	20,187	—	60,197
1963.....	27,134	2,179	8,228	16,362	—	53,903
1964.....	21,941	1,302	12,671	16,475	—	52,389
1965.....	18,635	2,193	10,886	19,777	—	51,491

CONSTRUCTION AND HOUSING

VALUE OF BUILDING PERMITS ISSUED, SELECTED CENTRES,
NORTHEASTERN ONTARIO REGION, 1964

	Residential	Industrial	Commercial	Institutional and Government	Total				
	(Thousands of Dollars)								
A—Clay Belt									
Cochrane									
Calvert Twp.	258	—	22	—	280				
Cochrane	215	—	11	102	328				
Hearst	168	115	80	13	376				
Iroquois Falls	266	—	—	560	826				
Kapuskasing	806	47	301	1,243	2,397				
Mountjoy Twp.	170	7	122	—	299				
Timmins	1,294	3	771	422	2,490				
Tisdale Twp.	29	24	29	—	82				
Whitney Twp.	70	—	2	4,342	4,414				
Nipissing									
Ferris East Twp.	146	—	7	6	159				
Ferris West Twp.	875	46	387	138	1,446				
Mattawa	52	—	3	210	265				
North Bay	630	33	403	464	1,530				
Sturgeon Falls	228	5	70	505	808				
Widdifield Twp.	795	55	172	2,391	3,413				
Timiskaming									
Charlton	1	—	2	—	3				
Cobalt	12	—	4	—	16				
Coleman Twp.	14	—	—	—	14				
Englehart	59	—	10	—	69				
Haileybury	187	—	51	—	238				
Larder Lake Twp.	5	—	2	—	7				
McGarry Twp.	2	—	7	—	9				
New Liskeard	346	26	141	102	615				
Teck Twp.	339	29	64	817	1,249				
B—Nickel Range									
Manitoulin									
Gordon Twp.	3	—	—	—	3				
Gore Bay	30	—	12	—	42				
Little Current	17	—	11	74	102				
Sudbury									
Balfour Twp.	97	11	1	984	1,093				
Capreol	174	—	2	3	179				
Capreol Twp.	63	—	—	—	63				
Chapleau Twp.	221	147	4	15	387				
Dowling Twp.	129	1	233	—	363				
Drury, Denison and Graham Twp.	214	—	15	198	427				
Elliot Lake I.D.	16	5	8	—	29				
Espanola	210	1	45	237	493				
Falconbridge Twp.	1	12	5	—	18				
Hanmer Twp.	117	1	25	83	226				
Massey	11	—	—	—	11				
Metro Sudbury	4,138	32	2,302	1,659	8,131				
Onaping I.D.	13	—	4	—	17				
Ratter and Dunnet Twp.	20	—	2	—	22				
Webbwood	4	—	2	—	6				

CONSTRUCTION AND HOUSING

VALUE OF BUILDING PERMITS ISSUED, SELECTED CENTRES,
NORTHEASTERN ONTARIO REGION, 1964 (Cont'd)

	Residential	Industrial	Commercial	Government	Institutional and (Thousands of Dollars)	Total
C — Sault						
Algoma						
Blind River.....	74	—	3	—	—	77
Bruce Mines.....	11	8	—	—	—	19
Iron Bridge.....	58	10	29	—	—	97
Korah Twp.....	1,789	17	428	348	—	2,582
Michipicoten Twp.....	407	20	230	237	—	894
Prince Twp.....	31	—	2	—	—	33
Sault Ste. Marie.....	3,009	78	3,605	776	—	7,468
Tarentorus Twp.....	4,050	569	2,949	518	—	8,086
Thessalon.....	62	—	51	28	—	141
Thompson Twp.....	—	—	2	—	—	2
Wicksteed Twp.....	5	—	40	—	—	45

CARGO HANDLED AT SPECIFIED PORTS, NORTHEASTERN ONTARIO REGION, 1959 TO 1964

TRANSPORTATION AND COMMUNICATIONS

	Loaded	In Coastwise Shipping		In Foreign Shipping		Total Foreign and Coastwise
		Unloaded	Total	Loaded (Cargo Tons)	Unloaded	
Cutler						
1959	—	—	38,051	38,051	—	38,051
1960	—	39,428	39,428	—	—	39,428
1961	—	39,589	39,589	—	—	39,589
1962	—	32,170	32,170	—	—	35,626
1963	—	33,239	33,239	—	—	33,239
Killarney						
1959	42,486	388	42,874	90,090	—	90,090
1960	25,025	492	25,517	—	—	25,517
1961	36	201	237	—	—	237
1962	37,081	108	37,189	80,760	—	80,760
1963	27	73	100	—	—	100
1964	52,804	40	52,844	67,036	—	67,036
Little Current						
1959	20,082	50,384	70,466	137,582	553,355	690,937
1960	12,541	43,025	55,566	154,674	598,463	753,137
1961	13,515	48,415	61,930	220,154	421,230	641,384
1962	10,377	49,893	60,270	236,517	256,442	493,159
1963	362	41,778	42,140	408,353	179,638	587,991
1964	36,893	40,278	77,171	598,244	424,569	1,022,813
Michipicoten Harbour						
1959	67,065	52,191	119,256	1,024,129	55,500	1,079,629
1960	—	36,632	36,632	750,588	74,503	825,091
1961	20,457	43,048	63,505	662,029	14,296	676,325
1962	32,716	53,122	85,838	508,610	44,094	552,704
1963	50,292	55,474	105,766	270,788	27,323	298,111
1964	145,205	44,190	189,395	251,535	27,406	278,941
Sault Ste. Marie						
1959	147,612	702,626	850,238	377,485	3,349,093	3,726,578
1960	142,650	774,537	917,187	383,769	3,402,381	3,786,150
1961	341,969	771,095	1,113,064	532,388	4,106,517	4,638,905
1962	306,173	931,487	1,237,660	485,513	5,208,200	5,751,969
1963	319,279	980,347	1,299,626	445,867	4,007,187	5,231,373
1964	356,596	1,159,085	1,515,681	233,885	3,931,603	5,752,680
						5,681,169

TRANSPORTATION AND COMMUNICATIONS

CARGO HANDLED AT SPECIFIED PORTS, NORTHEASTERN ONTARIO REGION, 1964

	Total Loaded	In Coastwise Shipping Unloaded	Total	Loaded (Cargo Tons)	In Foreign Shipping Unloaded	Total	Total Foreign and Coastwise
Cotter							
Gasoline	—	12,503	12,503	—	—	—	12,503
Fuel Oil	—	20,736	20,736	—	—	—	20,736
Total.	—	33,239	33,239	—	—	—	33,239
Killarney							
Stone Crude NES	20,760	—	20,760	14,470	—	14,470	35,230
Non-metal Min. Crude NES	32,015	—	32,015	52,566	—	52,566	84,581
General Cargo	29	40	69	—	—	—	69
Total.....	52,804	40	52,844	67,036	—	67,036	119,880
Little Current							
Pulpwood	36,850	—	36,850	17,600	—	17,600	17,600
Iron Ore and Conc.	—	—	—	578,104	2,752	580,856	617,706
Coal Bituminous	—	16,958	16,958	—	421,817	421,817	16,958
Gasoline	—	22,930	22,930	—	—	—	22,930
Fuel Oil	—	—	—	—	—	—	—
Wood Pulp	—	390	433	2,540	—	2,540	2,540
General Cargo	43	—	—	—	—	—	433
Total	36,893	40,278	77,171	598,244	424,569	1,022,813	1,099,984
Michipicoten Harbour							
Iron Ore and Conc.	145,205	—	145,205	251,535	8,336	259,971	405,076
Coal Bituminous	—	—	—	—	19,070	19,070	19,070
Gasoline	—	14,610	14,610	—	—	—	14,610
Fuel Oil	—	29,580	29,580	—	—	—	29,580
Total	145,205	44,190	189,395	251,535	27,406	278,941	468,336
Sault Ste. Marie							
Wheat Flour	—	751	751	—	—	—	751
Sugar	3	—	3	—	—	—	3
Food Preparations NES	—	1,489	1,489	—	—	—	1,489
Grain Feeds NES	—	2	2	—	—	—	2
Dist. Alcoholic Bev.	—	109	109	—	—	—	109
Logs, Round Timber	9,000	9,000	18,000	1,038	150	1,188	19,188
Pulpwood	61,930	163,600	225,530	—	1,006,512	1,006,512	225,530
Iron Ore and Conc.	—	508,671	508,671	—	—	—	508,671

Slag Dross By-Products	3	96,495	3	96,495
Sand and Gravel	—	—	—	—
Salt	—	—	—	—
Lumber and Timber	2,006	4,130	4,130	4,130
Railway Ties	6,580	—	2,006	2,006
Sawmill Products NES	17	—	6,580	6,580
Wood Fab. Materials NES	1	—	17	17
Wood Pulp	21	—	22	22
Newsprint Paper	25	—	25	25
Paperboard	43	—	2,278	2,278
Chemical Products NES	1	1	43	—
Chemical Products NES	10,335	3,215	13,550	—
Gasoline	3,126	4	3,130	—
Fuel Oil	—	87,814	87,814	87,814
Lubricating Oil Grease	—	259,422	259,422	259,422
Tar Pitch and Creosote	21,564	31	31	—
Ferro-Alloys	—	2,343	2,343	—
Pig Iron	—	718	718	88,769
Iron Steel Ingot Slab	25,803	5	25,808	77,353
Iron and Steel Scrap	—	—	—	13,614
Iron Steel Pipes NES	5,240	501	5,741	4,197
Iron and Steel NES	6,499	80	6,579	13,804
Steel Bar and Rod	120,206	52	120,258	151
Steel Plate and Sheet	69,315	15	69,330	29,895
Structural Shapes	—	—	—	1,186
Rails, Track Material	3,144	—	3,144	155
Railway Rolling Stock	—	—	—	184
Nickel and Alloys	43	43	—	184
Metal Fab. Prods. NES	—	7	7	—
Machinery	300	19	319	11
Autos and Chassis	—	138	138	5
Trucks and Chassis	4	—	4	—
Misc. Veh. and Parts NES	—	1	1	—
Containers Empty	376	—	376	276
Plate and Sheet Glass	—	—	—	1,471
Feeds Concent. Complete	—	—	—	25
Coal Anthracite	—	—	—	4,214
Coal Bituminous	—	—	—	2,289,404
Dolomite	—	—	—	12,966
Limestone	—	—	—	603,187
Stone Crude NES	—	—	—	100
Fluorspar	—	—	—	5,186
Misc. Products NES	11,052	4	31,480	—
Total General Cargo	356,596	1,159,085	1,515,681	313,885
Total	—	—	—	3,931,603
				233,885
				3,931,603
				4,165,488
				5,681,169

TRANSPORTATION AND COMMUNICATIONS

COMMODITIES CARRIED UPBOUND THROUGH
THE CANADIAN SAULT STE. MARIE CANAL, 1964

<u>Commodity</u>	<u>Canada</u>	Total to <u>United States</u> (Cargo Tons)	<u>Grand Total</u>
Food, Feed, Beverages and Tobacco:			
Food, beverages, tobacco, NES.....	1,463	513	1,976
Totals.....	1,463	513	1,976
Crude Materials, Inedible:			
Logs and round timber.....	2,382	2,880	5,262
Pulpwood.....	1,876	—	1,876
Metal scrap.....	3,384	—	3,384
Coal, bituminous.....	12,478	—	12,478
Limestone.....	6,303	—	6,303
Salt.....	14,485	—	14,485
Totals.....	40,908	2,880	43,788
Fabricated Materials, Inedible:			
Woodpulp.....	—	1,027	1,027
Gasoline.....	67,648	4,511	72,159
Fuel oil.....	131,923	37,276	169,199
Structural shapes and sheet piling.....	1,466	181	1,647
Iron and steel, NES.....	723	911	1,634
Fabricated materials, inedible, NES.....	717	35	752
Totals.....	202,477	43,941	246,418
Miscellaneous Freight, N.E.S.	605	29	634
Domestic Package Freight	97,758	—	97,758
Grand Totals, Upbound	343,211	47,363	390,574

COMMODITIES CARRIED DOWNSOUND THROUGH THE CANADIAN SAULT STE. MARIE CANAL, 1964

	Canada to		United States to		Grand Total	
	Canada	United States	Europe	Canada	United States	Europe
	(Cargo Tons)			(Cargo Tons)		
Food, Feed, Beverages and Tobacco:						
Milk powder	—	—	—	—	—	—
Barley	14,999	5,820	—	—	—	1,438
Oats	1,073	—	—	—	—	20,819
Rye.....	—	2,320	—	—	—	1,073
Wheat	10,394	—	—	—	—	2,320
Fodder and feed.....	53,627	—	—	2,973	—	10,394
Food, beverages and tobacco, NES.....	—	—	—	—	56,600	56,600
Totals	80,093	8,140	—	2,973	—	719
				—	2,157	93,363
Crude Materials, Inedible:						
Pulpwood	2,358	—	—	—	—	—
Iron and steel scrap	2,380	2,400	—	—	—	4,780
Sand and gravel.....	107,072	—	—	—	—	107,072
Crude materials, inedible, NES.....	—	—	782	—	—	782
Totals	111,810	2,400	782	—	—	114,992
Fabricated Materials, Inedible:						
Woodpulp	—	104,370	—	—	—	104,370
Newsprint paper	—	62,769	—	—	—	62,769
Chemicals	8,926	—	—	—	—	8,926
Gasoline	—	—	—	37,564	—	37,564
Fuel Oil.....	1,523	—	—	4,347	—	5,870
Tar, pitch and creosote.	6,913	—	—	—	—	6,913
Pig iron.....	136	2,294	—	—	—	2,430
Iron and steel: ingot, billet, rod, etc.	15,035	—	—	—	—	15,035
Steel: plate, sheet and strip.....	41,629	11,123	—	—	—	52,752
Structural shapes and sheet piling	17,273	680	—	—	—	17,953
Fabricated materials, NES.....	1,054	58	4	—	177	1,293
Totals.	92,489	181,294	4	41,911	177	315,875
Miscellaneous freight, NES	—	7,994	—	—	—	7,994
Domestic package freight.....	43,839	—	—	—	—	43,839
Grand Totals, Downbound	328,231	199,828	786	2,973	41,911	576,063

**ROAD AND HIGHWAY MILEAGES,
DISTRICTS, NORTHEASTERN ONTARIO REGION, 1964**

	Total Mileage	King's Highways		Secondary Highways	Tertiary Roads	Organized Township Roads	Unorganized Township Roads	Urban* Roads
		King's Highways	Tertiary Roads					
A—Clay Belt								
Cochrane.....	2,195.2	411.3	169.8	—	712.2	723.2	178.7	
Nipissing.....	1,677.2	376.1	96.5	35.0	636.0	398.7	134.9	
Timiskaming.....	1,673.5	272.2	211.5	—	665.6	467.2	57.0	
Sub-total.....	5,545.9	1,059.6	477.8	35.0	2,013.8	1,589.1	370.6	
B—Nickel Range								
Manitoulin.....	939.9	53.5	167.7	—	575.4	118.9	24.4	
Sudbury.....	2,426.1	402.3	293.9	4.2	822.1	594.0	309.6	
Sub-total.....	3,366.0	455.8	461.6	4.2	1,397.5	712.9	334.0	
C—Sault								
Algoma.....	2,319.9	475.7	316.1	—	823.1	520.2	184.8	
Total, Northeastern Ontario Region	11,231.8	1,991.1	1,255.5	39.2	4,234.4	2,822.2	889.4	
Total, Ontario.....	90,185.0	9,722.2	2,912.2	123.3	52,938.0	14,311.2 ¹⁾	10,178.1	
Northeastern Ontario Region as % of Ontario.....	12.5	20.5	43.1	31.8	8.0	19.7	8.7	

*Roads under local authority.

¹⁾Includes County Roads.

MOTOR VEHICLE REGISTRATIONS,
DISTRICTS, NORTHEASTERN ONTARIO REGION, 1955, 1964 AND 1965

	Passenger	Dual Purpose ^a	Truck ^b	% Change	
				1965/1955	1965/1964
A—Clay Belt					
Cochrane	13,338	4,032	17,370		
1955 18,448 1,897 24,886	1964 19,145 1,578 25,693	1965 8,225 3,756 47.9	1964 15,515 3,496 20,677	1965 16,651 3,670 21,693	3.2
Nipissing	1955 1,964	1964 1,666	11,981		
1965 1,725	1965 1,372	20,677	81.1	4.9	
Timiskaming	1955 11,076	1964 10,567	4,140	15,216	
1965 10,509	1965 8,666	3,268	14,801		
Sub-total	1955 32,639	1964 44,530	3,337	14,712	-0.6
1965 46,305	1965 4,529	11,928	44,567	3.3	
R Nickel Range	1955 1,866	1964 2,024	60,364		
Manitoulin	1955 1,866	1964 2,024	11,305		
1965 2,149	1965 2,149	11,977	60,364		
Sudbury	1955 22,234	1964 37,475	62,098		
1965 38,942	1965 24,100	11,977	62,098		
Sub-total	1955 39,499	1964 41,091	11,977		
C Sault	1955 11,527	1964 26,745	959	2,825	
Algoma	1955 11,527	1964 28,762	525	2,719	
1965 68,266	1965 32,133	3,173	3,173	12.3	
Total, Northeastern Ontario Region	1955 110,774	1964 116,158	6,828	37,959	135.1
1965 110,774	1965 116,158	6,828	37,959	135.1	
Total, Ontario	1955 1,292,133	1964 1,877,443	24,049	92,315	5.6
1965 1,976,625	1965 1,976,625	151,085	287,942	147,190	
			334,759	1,605,532	
			2,363,287	2,484,215	
			344,519	54.7	
			54.7	5.1	

^aNot available on a district basis in 1955; included in figure for trucks. Dual purpose includes station wagons and similar vehicles.

^bEstimated.

TRANSPORTATION AND COMMUNICATIONS

DISTRIBUTION OF TELEVISION HOUSEHOLDS,
DISTRICTS, NORTHEASTERN ONTARIO REGION, JANUARY, 1966

	Households	Television Households	Per Cent Television	
			1965	1966
A—Clay Belt				
Cochrane.....	23,300	21,500	90	92
Nipissing.....	17,700	17,000	94	96
Timiskaming.....	13,000	12,100	88	93
Sub-total.....	54,000	50,600	91	94
B—Nickel Range				
Manitoulin.....	2,290	2,570	81	88
Sudbury.....	41,400	40,000	95	97
Sub-total.....	43,690	42,570	94	97
C—Sault				
Algoma.....	29,800	27,700	92	93
Total, Northeastern Ontario Region.....	127,490	120,870	92	95
Total, Ontario.....	1,803,300	1,727,680	95	96

Source: The Bureau of Broadcast Measurement.

**RETAIL TRADE, DISTRICTS AND INCORPORATED CENTRES OF 2,000 AND OVER,
NORTHEASTERN ONTARIO REGION, 1951 AND 1961**

	Population		Number of Stores		Sales (\$000's)		Total Payroll for Year (\$000's)	
	1951	1961	1951	1961	1951	1961	1951	1961
A—Clay Belt								
Cochrane	83,850	95,666	783	790	54,832.8	79,634.0	3,835.2	6,761.5
Cochrane	3,401	4,521	55	53	5,404.6	6,092.5	323.7	531.1
Hearst	1,723	2,373	36	46	2,980.1	3,620.2	158.6	278.7
Kapuskasing ¹	4,687	6,870	53	69	6,190.3	14,456.1	434.7	1,298.1
Timmins	27,743	29,270	282	261	24,635.6	30,864.8	2,036.2	2,918.2
Nipissing	50,517	70,568	461	549	38,270.2	65,419.5	2,730.6	6,173.2
Mattawa	3,097	3,314	41	35	2,980.0	2,437.6	147.6	206.6
North Bay	17,944	23,781	192	229	24,444.4	39,567.3	2,006.9	4,136.6
Sturgeon Falls	4,962	6,288	63	72	5,091.1	8,209.1	321.9	703.3
Timiskaming	50,016	50,971	558	521	33,821.2	40,518.3	2,272.9	3,428.6
Cobalt	2,230	2,209	43	35	2,067.4	2,026.3	132.0	132.6
Haileybury	2,346	2,638	34	33	1,784.5	2,261.9	108.3	147.9
New Liskeard	4,215	4,896	68	73	7,163.3	8,615.6	439.4	798.7
B—Nickel Range								
Manitoulin	11,214	11,176	131	133	5,363.7	7,908.9	299.5	489.7
Sudbury	109,590	165,862	862	1,071	80,371.6	152,566.4	6,190.3	14,483.1
Capreol	2,002	3,003	32	24	1,340.9	2,221.6	63.4	128.4
Chelmsford	1,210	2,559	16	24	669.4	2,125.1	27.9	115.3
Coniston ¹	2,292	2,692	16	12	731.6	847.8	27.7	47.0
Copper Cliff	3,974	3,600	23	17	2,047.0	2,011.3	155.0	224.9
Espanola	1,833 ²	5,353 ²	58	58	580.0	6,489.2 ²	1,595.9 ²	536.3
Levack	3,178 ²	9	9	6	580.0	1,595.9 ²	36.6	118.9
Lively	3,211 ²	406	585	54,111.6	841.4 ²	841.4 ²	74.4	113.355.2
Sudbury	42,410	80,120			112,356.6	4,711.6		
C—Sault								
Algoma	64,496	111,408	598	848	45,266.2	108,934.4	3,046.3	10,176.1
Blind River ¹	2,512	4,093	36	58	1,984.3	6,028.8	113.2	454.5
Sault Ste. Marie ¹	32,452	43,088	360	403	33,326.0	69,594.3	2,455.5	6,897.8
Total, Northeastern Ontario Region	369,683	505,651	3,393	3,912	257,925.7	454,981.5	18,374.8	41,512.2

(Change in municipal boundaries since 1951. Data shown are for areas as incorporated in each of these years.

¹Incorporated or under 1,000 in 1951 1951 data not available.

**RETAIL TRADE BY KIND OF BUSINESS GROUP AND SELECTED TRADE,
DISTRICTS, NORTHEASTERN ONTARIO REGION, 1961**

	Cochrane		A—Clay Belt		Timiskaming	
	Number of Stores	Sales (\$'000's)	Number of Stores	Sales (\$'000's)	Number of Stores	Sales (\$'000's)
Food Group						
Bakery Products Stores.....	9	441.8	11	319.2	6	175.7
Confectionery Stores.....	46	523.3	21	578.2	46	744.8
Grocery and Combination Stores.....	187	21,749.3	84	14,778.1	95	11,191.6
Meat Markets.....	4	164.0	5	508.5	2	—
Total, Food Group.....	253	22,965.7	127	16,324.7	149	12,166.3
General Merchandise Group						
General Stores.....	48	4,158.9	28	3,724.5	23	1,868.0
Variety Stores.....	12	2,634.0	7	1,801.1	7	1,223.4
Total, General Merchandise Group.....	85	12,905.0	47	10,441.9	43	5,650.6
Automotive Group						
Automobile Dealers.....	23	13,719.5	17	9,447.9	20	5,952.9
Used Car Dealers.....	1	—	1	—	2	—
Accessories, Tire and Battery Shops.....	11	1,685.5	6	1,681.3	6	1,117.7
Service Stations.....	86	5,211.7	110	6,363.1	78	3,326.6
Garages.....	25	837.7	18	999.4	17	360.8
Total, Automotive Group.....	165	22,006.6	161	19,179.2	131	11,251.8
Apparel and Accessories Group						
Men's and Boys' Clothing Stores.....	23	2,014.2	15	1,329.8	15	953.7
Women's Ready-To-Wear Stores.....	21	980.2	14	1,479.0	17	944.3
Family Clothing and Furnishings Stores.....	19	2,518.4	9	618.6	13	763.7
Shoe Stores.....	6	455.4	13	935.5	9	414.7
Total, Apparel and Accessories Group.....	92	6,541.8	65	5,001.6	65	3,343.7

			B — Nickel Range	C — Sault	
			Manitoulin	Sudbury	Algoma
Hardware and Home Furnishings Group					
Hardware Stores.....	20	2,179.0	14	1,143.5	22
Furniture Stores.....	9	652.2	10	1,107.2	7
Household Appliance Stores.....	15	790.5	8	639.8	7
Furniture, Television, Radio and Appliance Stores.....	10	1,252.6	5	764.1	6
Total, Hardware and Home Furnishings Group.....	86	5,624.3	52	4,249.3	61
Other Retail Stores Group					
Drug Stores.....	19	1,797.2	15	1,469.2	18
Fuel Dealers.....	6	430.7	13	2,004.8	8
Book and Stationery Stores.....	1	—	1	—	3
Cameras and Photographic Supplies Stores.....	2	—	2	—	1
Jewellery Stores.....	16	546.3	12	400.8	10
Sporting Goods Stores.....	3	45.8	3	163.9	—
Total, Other Retail Stores Group.....	109	9,590.6	97	10,222.8	72
Total, All Stores	790	79,634.0	549	65,419.5	521
Food Group					
Bakery Products Stores.....	1	—	16	659.4	11
Confectionery Stores.....	1	—	115	2,531.0	62
Grocery and Combination Stores.....	28	1,559.1	171	39,225.5	150
Meat Markets.....	1	—	15	1,258.0	5
Total, Food Group.....	31	1,615.9	328	44,103.1	237
General Merchandise Group					
General Stores.....	17	1,453.7	40	4,560.9	25
Variety Stores.....	3	141.3	14	7,614.8	8
Total, General Merchandise Group	23	1,944.3	72	23,781.5	50
Automotive Group					
Automobile Dealers.....	4	1,018.9	23	20,833.7	29
Used Car Dealers.....	—	—	16	1,686.4	5
Accessories, Tire and Battery Shops.....	1	—	10	2,427.9	6
Service Stations.....	26	970.7	195	13,496.4	123
Garages.....	9	206.9	35	1,829.3	29
Total, Automotive Group	43	2,358.6	301	40,905.0	218

**RETAIL TRADE BY KIND OF BUSINESS GROUP AND SELECTED TRADE,
DISTRICTS, NORTHEASTERN ONTARIO REGION, 1961 (Cont'd)**

	B- Nickel Range			C-Sault	
	Manitoulin	Sudbury	Algoma	Number of Stores	Sales (\$'000's)
Apparel and Accessories Group					
Men's and Boys' Clothing Stores.....	1	—	29	3,103.4	20
Women's Ready-To-Wear Stores.....	—	—	26	2,682.5	37
Family Clothing and Furnishings Stores.....	3	263.2	14	1,332.2	18
Shoe Stores.....	—	—	15	1,647.5	22
Total, Apparel and Accessories Group.....	6	362.3	112	10,322.3	118
Hardware and Home Furnishings Group					
Hardware Stores.....	5	183.5	28	2,635.7	19
Furniture Stores.....	2	—	11	2,203.3	5
Household Appliance Stores.....	1	—	7	667.0	5
Furniture, Television, Radio and Appliance Stores.....	—	—	13	3,069.1	13
Total, Hardware and Home Furnishings Group.....	13	506.1	101	9,415.9	76
Other Retail Stores Group					
Drug Stores.....	4	201.2	25	2,914.2	26
Fuel Dealers.....	1	—	19	4,114.0	19
Book and Stationery Stores.....	—	—	5	206.9	3
Cameras and Photographic Supplies Stores.....	—	—	1	—	—
Jewellery Stores.....	1	—	16	1,998.6	20
Sporting Goods Stores.....	—	—	4	354.1	10
Total, Other Retail Stores Group.....	17	1,121.7	157	24,038.6	149
Total, All Stores.....	133	7,908.9	1,071	152,566.4	848

—Figures withheld to avoid disclosure of individual operations.

—Nil or zero.

**SERVICES, BY DISTRICTS AND INCORPORATED CENTRES
OF 1,000 POPULATION AND OVER,
NORTHEASTERN ONTARIO REGION, 1961**

District	Number of Locations	Receipts (\$'000)	Total Payroll for Year (\$'000)
A—Clay Belt			
Cochrane			
Cochrane.....	32	963.2	190.7
Hearst.....	44	935.9	141.0
Iroquois Falls.....	8	210.0	87.7
Kapuskasing.....	41	1,842.2	508.8
Smooth Rock Falls.....	6	99.5	20.0
Timmins.....	142	4,004.6	981.4
Remainder of District.....	165	3,298.7	520.0
Total, Cochrane.....	438	11,354.1	2,449.6
Nipissing			
Mattawa.....	26	565.7	107.7
North Bay.....	147	5,748.7	1,420.8
Sturgeon Falls.....	39	1,125.1	238.3
Remainder of District.....	299	5,120.0	932.7
Total, Nipissing.....	511	12,559.5	2,699.5
Timiskaming			
Cobalt.....	19	277.1	52.7
Englehart.....	14	204.5	24.8
Haileybury.....	15	363.8	68.7
New Liskeard.....	32	857.8	173.7
Remainder of District.....	208	4,039.3	798.3
Total, Timiskaming.....	288	5,742.5	1,118.2
B—Nickel Range			
Manitoulin			
Little Current.....	17	244.7	36.2
Remainder of District.....	112	935.8	231.3
Total, Manitoulin.....	129	1,180.5	267.5
Sudbury			
Capreol.....	15	378.6	81.6
Chelmsford.....	14	220.6	19.6
Coniston.....	6	51.6	2.2
Copper Cliff.....	7	107.9	38.7
Espanola.....	28	820.6	180.3
Levack.....	7	100.5	17.9
Lively.....	2	--	--
Massey.....	12	--	--
Sudbury.....	334	15,627.2	3,939.6
Remainder of District.....	295	4,967.6	723.8
Total, Sudbury.....	720	22,518.8	5,052.6
C—Sault			
Algoma			
Blind River.....	38	810.8	137.8
Sault Ste. Marie.....	234	12,475.5	3,490.5
Thessalon.....	19	358.9	56.2
Remainder of District.....	339	6,896.1	1,250.5
Total, Algoma.....	630	20,541.3	4,935.0
Total, Northeastern Ontario Region.....	2,716	73,896.7	16,522.4
Total, Ontario.....	32,014	1,175,641.8	320,660.8

--Figures withheld to avoid disclosure of individual operations.

SERVICES, BY KIND OF BUSINESS GROUP, DISTRICTS, NORTHEASTERN ONTARIO REGION, 1961

	Northeastern Ontario Region								Total, Northeastern Ontario Region (\$'000)			
	Clay Belt				Nickel Range							
	Cochrane	Nipissing	Timiskaming	Sudbury	Algoma	Number of Locations	Receipts (\$'000)	Number of Locations	Receipts (\$'000)	Number of Locations	Receipts (\$'000)	
Amusement and Recreation.....	39	935.3	18	692.6	21	410.1	4	8.2	49	1,477.2	33	1,231.5
Business Services.....	12	296.2	14	346.8	8	—	1	—	18	794.9	12	591.5
Personal Services.....	169	1,364.7	111	1,346.0	79	666.4	12	68.1	243	3,219.3	163	2,004.2
Repair Services.....	16	231.2	10	224.4	5	122.3	1	—	17	581.8	13	383.2
Undertaking and Funeral Services.....	6	203.3	4	189.0	5	185.0	2	—	6	747.5	6	191.7
Photography.....	4	—	3	149.5	1	—	—	—	7	172.7	8	137.0
Miscellaneous Services.....	2	—	8	499.0	1	—	—	—	8	503.7	12	3,541.6
Hotel, Tourist Camp and Restaurant.....	190	8,212.2	343	9,112.2	168	4,164.9	109	1,036.6	372	15,021.7	383	12,460.6
Total.....	438	11,354.1	511	12,559.5	288	5,742.5	129	1,180.5	720	22,518.8	630	20,541.3

—Figures withheld to avoid disclosure of individual operations.

—Nil or zero.

n.a. Not applicable as certain figures not published.

THE NORTHEASTERN ONTARIO REGION



PHYSIOGRAPHIC DISTRICTS

BOUNDARIES

1 HUDSON BAY LOWLANDS

- (a) James Bay Coastal Plain
- (b) Border Lowlands

2 CENTRAL DRIFT PLAINS

- (a) Great Clay Belt
- (b) Central Patricia Plains

3 CANADIAN SHIELD

- (a) Long Lake Uplands
- (b) Lake Superior Uplands
- (c) Gogama Sandy Uplands
- (d) Algonquin Park Uplands

4 LITTLE CLAY BELT

5 SUDSBURY BASIN

6 NIPISSING LOWLANDS

7 MANITOULIN ISLAND

PROVINCIAL PARKS

DISTRICT BOUNDARIES

RAILWAYS

MAIN HIGHWAYS

HEIGHT OF LAND

0 10 20 30 40 50 60
Scale in Miles

PREPARED BY THE
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1965



